

American Forests *and* Forest Life



November, 1927

The American Forestry Association

Washington, D. C.

President

GEORGE D. PRATT, 26 Broadway, New York, N. Y.

Vice-Presidents

DANIEL CARTER BEARD—New York
National Scout Commissioner, Boy Scouts of America

MISS MARTHA BERRY—Georgia
Founder, Berry Schools

CLARENCE B. BLETHEN—Washington
Publisher, Seattle Times

BERTHA CHAPMAN CADY—New York
Naturalist, Girl Scouts

D. C. EVEREST—Wisconsin
Vice-President, American Paper and Pulp Association

RICHARD T. FISHER—Massachusetts
Director, Harvard Forest

EVERETT G. GRIGGS—Washington
Former President, National Lumber Manufacturers Association

FAIRFAX HARRISON—Virginia
President, Southern Railway Company

CARL HAYDEN—Arizona
United States Senator-elect

WALTER L. HUBER—California
President, Sierra Club

WILLIAM M. JARDINE—Kansas
Secretary of Agriculture

OTIS R. JOHNSON—California
Vice-President, California Forest Protective Association

JOHN L. KAUL—Alabama
President, National Lumber Manufacturers Association

A. W. LAIRD—Idaho
President, Western Forestry and Conservation Association

CHARLES L. McNARY—Oregon
United States Senator and Joint Author, Clarke-McNary Law

A. A. MURPHREE—Florida
President, University of Florida

L. J. TABER—Ohio
Master, National Grange

SIR HENRY THORNTON—Canada
President, Canadian National Railways

TOM WALLACE—Kentucky
Chief, Editorial Staff, Louisville Times

OWEN D. YOUNG—New York
Vice-President, General Electric Company

Treasurer

GEORGE O. VASS, Vice-President, Riggs National Bank, Washington, D. C.

Assistant Treasurer

I. J. ROBERTS

Executive Secretary

OVID M. BUTLER, The Lenox Building, 1523 L Street, Washington, D. C.

Forester

SHIRLEY W. ALLEN

Business Manager

C. V. MAUDLIN

Board of Directors

J. E. ALDRED, 1931—New York
Chairman Board of Directors, Pennsylvania Water & Power Company

ROBERT P. BASS, 1929—New Hampshire
Ex-Governor of New Hampshire

F. W. BESLEY, 1930—Maryland
State Forester of Maryland

HENRY SOLON GRAVES, 1927—Connecticut
Dean of Yale Forest School

AUGUSTUS S. HOUGHTON, 1929—New York
Camp-fire Club of America

FRANK O. LOWDEN, 1930—Illinois
Former Governor of Illinois

JOHN C. MERRIAM, 1931—District of Columbia
President, Carnegie Institution of Washington

GEORGE HEWITT MYERS, 1929—Washington, D. C.

JOSEPH HYDE PRATT, 1928—North Carolina
President, North Carolina Forestry Association

WILLIAM M. RITTER, 1927—Ohio
President, Hardwood Manufacturers' Institute

CHARLES SHELDON, 1927—District of Columbia
Author and Explorer

MRS. JOHN D. SHERMAN, 1928—Colorado
President, General Federation of Women's Clubs

HENRY W. SHOEMAKER, 1928—Pennsylvania
Member of the State Forest Commission

GEORGE W. SISSON, JR., 1930—New York
American Paper and Pulp Association

WM. P. WHARTON, 1927—Massachusetts
Secretary, National Association of Audubon Societies

WHAT THE ASSOCIATION IS WORKING FOR

ADEQUATE FOREST FIRE PROTECTION by federal, state, and other agencies, individually and in cooperation; the REFORESTATION OF DENUDED LANDS, chiefly valuable for timber production or the protection of stream-flow; more extensive PLANTING OF TREES by individuals, companies, municipalities, states and the federal government; the ELIMINATION OF WASTE in the manufacture and consumption of lumber and forest products; the advancement of SOUND REMEDIAL FOREST LEGISLATION.

The ESTABLISHMENT OF NATIONAL AND STATE FORESTS where local and national interests show them to be desirable; the CONSERVATIVE MANAGEMENT OF PUBLIC AND PRIVATE FORESTS so that they may best serve the permanent needs of our citizens; the development of COMMUNITY FORESTS.

FOREST RECREATION as a growing need in the social development of the nation; the PROTECTION OF FISH AND GAME and other forms of wild life, under sound game laws; the ESTABLISHMENT OF FEDERAL AND STATE GAME PRESERVES and public shooting grounds; STATE AND NATIONAL PARKS and monuments where needed, to protect and perpetuate forest areas and objects of outstanding value; the conservation of America's WILD FLORA and FAUNA.

The EDUCATION OF THE PUBLIC, especially school children, in respect to our forests and our forest needs; a more aggressive policy of RESEARCH AND EDUCATIONAL EXTENSION in the science of forest production, management and utilization, by the nation, individual states, and agricultural colleges; reforms in present methods of FOREST TAXATION, to the end that timber may be fairly taxed and the growing of timber crops increased.

AMERICAN FORESTS AND FOREST LIFE

The Magazine of The American Forestry Association

Ovid M. Butler, Editor, L. M. Cromelin and Erle Kauffman, Assistant Editors

Vol. 33

NOVEMBER, 1927

No. 407

Published monthly—35 cents a copy—\$4.00 a year.

CONTENTS

THE COVER

"From the Cabin Door"—Photograph by H. Armstrong Roberts

| | |
|---|-----|
| MAN INDOMITABLE By Edwin L. Sabin..... | 643 |
| A FAITHFUL WITNESS TREE By Samuel J. Record..... | 646 |
| COLONEL GREELEY REFUTES BAUM CHARGES..... | 647 |
| CRUISING AMID FIORDS AND GLACIERS By H. J. Lutz..... | 649 |
| THE FOREST LEGION Poem by Phyllis McGinley..... | 653 |
| THE KING OF BIRDS By Alexander Sprunt, Jr..... | 654 |
| A PINE-CONE BALL By W. R. Mattoon..... | 656 |
| NATURE'S GIANT BRIDGES By Guy Elliott Mitchell..... | 657 |
| AN OREGON PIONEER IN FORESTRY By Allen H. Hodgson..... | 661 |
| ANCIENT TREES MINED AS COAL By E. Wheeler Whitmore..... | 664 |
| MAINE'S LAST CARIBOU HERD By Clara Newhall Fogg..... | 665 |
| EUCALYPTUS—AN AUSTRALIAN TREE IMMIGRANT By Woodbridge Metcalf..... | 667 |
| THE ELDER'S DESERT By A. E. Moss..... | 670 |
| INDIAN SUMMER Poem by Clarence Mansfield Lindsay..... | 671 |
| ON AND OFF THE TRAIL Pictorial Feature..... | 672 |
| WOLVES, COYOTES AND NATURE FAKERS By Walter J. Perry..... | 674 |
| EDITORIALS..... | 677 |
| ECCENTRICITIES OF DIET By William Thompson..... | 679 |
| THE FERN GATHERERS By Elba A. Henry..... | 682 |
| TANGO By R. R. Willey..... | 685 |
| A TRAVELLER TO ARCADY Poem by Clarence Mansfield Lindsay..... | 686 |
| SAPLING SAM..... | 687 |
| AROUND THE STATES..... | 690 |

AMERICAN FORESTS AND FOREST LIFE invites contributions in the form of popular articles, stories and photographs dealing with trees, forests, reforestation, lumbering, wild life, hunting and fishing, exploration or any of the many other activities which forests and trees typify. Its pages are open to a free discussion of forest questions which in the judgment of the editor will be of value in promoting public knowledge of our forests and their use. Signed articles published in the magazine do not necessarily reflect the views of the Association. Manuscripts must be accompanied by return postage. Editorial and Publication Office, The Lenox Building, 1523 L Street, Washington, D. C.



THE HIGHLANDS IN THE BLUE RIDGE FOOTHILLS

is offered at a ridiculously low price to close an estate

The Highlands

is in the beautiful Piedmont section—12 miles from the southern gateway of the Shenandoah National Park, 4 hours to Washington, D. C. Virginia's finest state highway leads past the estate entrance. Four minutes' walk on the new macadam road to schools and churches.



150 ACRES OF ORCHARDS

4,500 Pippin, Winesap and Jonathan Apple trees, and 700 Peach trees. All trees have been scientifically pruned and are in excellent condition.

The Highlands

is also a big-business farm, producing proper investment income from tremendous crops of fruit, grain, hay and excellent pasturage. The 575 acres include 300 fertile level acres under cultivation. 150 acres of healthy orchards, of full bearing age, and 125 acres of pasturage and fine timber. It is an ideal farm for the business farmer.

Plenty of Fox, Coon, Opossum, Rabbit and Quail

The Highlands

residence has 10 large rooms, and all conveniences including gas, gravity water system, hard wood floors, hot water heat, sunrooms and gardens of charming seclusion. All buildings are practically new and everything is in first class condition.



The fountain on the front lawn, fed by a neverfailing spring, typical of the many little things that make THE HIGHLANDS a comfortable and pleasant as well as a profitable place to live.

A group of modernly equipped livestock barns, chicken run and garage are connected with the liberal water supply. Outbuildings include tool and supply houses, smokehouse and granary, ice house, garage, etc. Seven modern 5-room cottages for employees scattered over estate.

THE TIME LIMIT SET FOR LIQUIDATING THE ESTATE IS LIMITED AND THE HIGHLANDS MUST BE SOLD AT AN EARLY DATE REGARDLESS OF ITS TRUE VALUE

For full particulars write or wire

ARTHUR M. GABLE

COVESVILLE, VA.

AMERICAN FORESTS

VOL. 33

NOVEMBER, 1927

No. 407

MAN INDOMITABLE

By EDWIN L. SABIN

Illustrated by Eugene Cassady

THE man, middle-aged and rugged, had been quite sure of himself, although strayed from his party and alone in the mountain wilderness. He was well outfitted with practically all the defensive equipment of his civilization and would eventually strike the trail; his chief grievance was that he had broken his spectacles, and he was a trifle near-sighted. But that vexed him little. He had a small opera-glass with which to extend his vision.

On this morning, however, the second day of his wandering since he had blundersomely lost his party while reconnoitering afoot in the thick down timber, he heard a noise, and looking around saw his horse, left untethered, galloping away amid the dark pines. With his horse went blankets, gun, fishing tackle and matches. He was left with the clothing on his back, a pocket knife, and the opera-glass; by one cunning stroke of the wilderness he had been reduced to first principles.

During the day he came to a small clearing and posted notices directing his friends to the route he supposedly was taking. They were written with pencil upon leaves of his notebook. That night after fatuous wandering, he made lone,

cold and hungry camp in a thicket of scrub pines besieged by the pitchy darkness and the cries of prowling varmints.

But with the morning he still had hope. Cold and hungry he set out, and about noon wandered into the clearing where he had posted the notices. He had circled. The notices were untouched; he knew that he was lost.

Nevertheless, he was confident of finding his comrades. It was inconceivable that he, an intelligent, able-bodied man, should perish in these beautiful, abundant solitudes. During the fourth foodless, fireless day he won out from the bewildering timber upon the shore of a lovely lake. Across from the wide sandy beach a mighty range of mountains towered.

Vapor from hot springs floated in the air; a geyser jet sparkled. He saw countless water-fowl, otters, deer, elk and sheep within pistol shot; but not an ounce of this tantalizing meat was for him.

A canoe with a single figure in it seemed to have put out from a distant point, as if coming to his rescue. He ran down into the shallows to greet it, but it turned into a great pelican and flew away.

Questing about for a night's shelter he was moved to pull up a green plant. He tasted the tapering, radish-like root and found that it was palatable. The plant appeared to be a variety of thistle, and upon its roots he made his first meal in four days of wandering.



With trembling fingers he held the small lens over the shreds of dry wood, and in a moment a spark flickered and a tiny blaze flared up. He was on defense now

This night he was aroused from sleep under a tree by a weird cry. He had been answering those cries, in the days preceding, but now, as the alarm rang in his ears, he was not deceived. Scarcely had he staggered to his feet when the lion snuffed and growled behind him. He scrambled into the top of a tree, shouting and hurling broken branches. After a while the lion bounded into the timber. The man was so nearly exhausted that he slid down and slept until morning.

The weather changed suddenly to snow and rain. Covering under the tree he lay hounded worse than a wild beast. During the second day of the storm he closed his hand upon a benumbed snow-bird. He plucked the bird and devoured it raw—a delicious morsel.

On the third day of the storm there was an hour of calm and he started for the hot springs, ten miles around the lake. The storm resumed, with increasing cold. Icily wet and feet frost-bitten, he arrived at the first group of springs, and in their midst lay down upon the warm crust. In erecting a bower of pine boughs he discovered that he had lost his knife. Another item gone. But thistles were plentiful and the boiling spring furnished a dinner-pot.

The storm increased in fury as if determined to crush him. He tried to think of how man before him had triumphed over similar straits. A foot of snow had fallen; he could not venture further without fire. He must have fire.

On the seventh day of the storm, his twelfth day of travail, the sun gleamed through the mists; and then, but not until then, did his fevered mind dart to his opera-glass. The lens! With trembling fingers he held it over a shred of dry wood. In a moment a spark flickered and a tiny blaze flared up. He was learning.

He had broken through the crust and scalded his hip. His boot soles were reduced to pulp, his frozen feet were festering. He sharpened the tongue of his vest buckle upon a rock and cut the legs and uppers from his boots. These he fashioned into a pair of moccasins and tied them on with his handkerchief. He fashioned food sacks from part of his boot-legs and slung them to his belt. He brought to light a piece of red tape and a pin, which might do for a fish line

and hook. He was on defense now and learning.

As the morning of the fifteenth day dawned he set out again, accoutered, and hopeful. But he had reckoned without his host. During the afternoon the sky clouded again and the wind increased, preventing him from using his lens. He moved about all the night on a bleak hillside to keep from freezing, returning to the more hospitable lake the following day, built a fire when the sun finally appeared and spent two days regaining his strength.

Having learned another lesson, he thereafter carried a brand with him, which, renewed from time to time, was kept alive by waving it and blowing upon it.

He traveled, traveled, traveled; a ragged, half-famished wanderer, subsisting upon thistles. His fish-

ing tackle proved ineffective as he had no bait. Once he found a frozen grasshopper and angled half a day for trout without success.

Forests, mountains and fallen timber impeded him. The fibrous thistles clogged his system. The burn in his hip prevented him from sleeping except sitting up. Then he fell forward into the fire and did not awaken until he had painfully burned his right hand.

On the nineteenth evening, upon the sandy shore of another lake he removed his moccasins in order to plunge his sore feet among the gratefully warm sands while gathering driftwood. When time came to protect his

feet from the freezing night he had only one moccasin.

This was appalling. These rude moccasins were necessities. He could not travel, could not endure without them. With a blazing brand he frantically searched on hands and knees, through the darkness of the beach, and in the brush where he had gleaned fagots. He was inexpressibly rejoiced after an hour or two to find it. He felt wealthy.

The twentieth day was a red-letter day. Fortune certainly had mellowed. This noon, upon the shore of a lake, he found the campsite of his friends. To be sure, he found no food but there was left a two-tined fork and a half pint can. With a tool for digging his roots and with a drinking cup and dinner pot in one, he was indeed rich. Could Crusoe have desired more?

The party's out trail failed his clumsy eyes. But possessed with his new treasures he made his night's

THAT truth is stranger than fiction is a fact that has been expounded through the ages. When the Editor was asked to accept these extraordinary adventures as true human experiences, he could not disabuse his mind of the idea that the story is unlikely and incredible. To verify the facts he appealed to the Montana Historical Society. Every incident of this man's struggle through the terrible forest solitudes for thirty-seven days as narrated by Mr. Sabin is authentic and coincides with the historical documents of Montana. According to the "History of Montana," by H. F. Sanders, and "Montana Historical Society Contributions," the man was commissioned Assessor of Internal Revenue for Montana in 1864, and was a member of Surveyor General Henry D. Washburn's Yellowstone Park Expedition in 1870. After exploring a high, rugged mountain, which now bears his name, he strayed from his party in a densely timbered country. He was rescued by two woodsmen, Baronet and Prichette, who had taken up the search after his party had given him up as lost. His name? Well that's getting ahead of the story.—Editor.

fire and crept under a pine-bough shelter for protection from the fierce wind. He was disturbed by a snapping and crackling sound behind him, and turned to see his shelter ablaze and the adjacent forest a sheet of flame. With his sound left hand burned and his hair singed he fled for his life. He saved his fork and tin can, but somehow lost his buckle-tongue knife, his tape fish-line and bent pin hook.

Nature again had penalized him for his carelessness, but he felt a childish grief from his poverty.

With the day, the man toiled on, seeking outlet amid immense panoramas of rugged hills, matted forests, rocky lakes and beetling mountain-ranges. At night he slept like an animal. He arose and continued his course, ate the last of his thistles and could find no more.

Such a disaster had not occurred to him. Depending upon the ever present thistles he foolishly had taken only a small supply with him. The way was rough and barren and his hunger increased. He was a man starving for lack of thistles, the only root he knew, and his one article of food. An insistent voice in his ears, like the voice of a tangible companion, ordered him to turn back. He argued that he could not—he dared not; he had not the strength. "You must start at once," the voice commanded. "There is no food here."

Inspired by the voice, he turned about and reached the lake on his fifth day without food. Here he gathered thistles and returned to the point from which he had set out.

Was he never to escape? The thought perished with the morning sun. He stocked up on thistles, chose a new route, and headed on. This, his twenty-

seventh day, proved to be another red-letter day, for in the midst of the forest he came upon the fresh tip of a gull's wing, overlooked by the varmint that had killed it.

The man halted at once and built a fire. Then filled his can with water from a spring and boiled the wing tip. He sucked down half a pint of thin broth which so satiated him that he slept for half a day and a night.

His stomach was refusing to digest the thistle roots. Voices constantly accompanied him; his stomach and legs assumed to be separate, speaking entities which

complained of the treatment he was giving them. He implored them to be patient. He was obsessed with visions of great tables steaming with roasts and stews, and laden with plump pies. He spent entire nights eating—and rose hungry.

The sun beguiled him in his weakness and he neglected to carry a brand. The sky clouded, cold settled, and denied one moment of sunshine for his lens. He passed another night of freezing misery.

A small stream tempted him with flesh. It was swarming with minnows. He scooped them up in his two hands and devoured them raw. His

stomach bitterly reproached him for this ill usage.

A bear had couched in a large hollow tree. The man took possession also, first starting a fire with his lens. By morning the fire had spread into the timber, but he did not care; he had slept warmly.

Again a terrible storm of sleet and snow beat upon him. He had left the last forest and its thistles and was in the sterile, sparsely brushed open country. Upon rations of thistles he had shrunk to his very bones, covered only with skin that clung like wet parchment.



"He was exceedingly weak, rather confused, and quite blind. All his movements were mechanical. He was aware that a lion was following him, but that gave him small concern. He must make on, on—always on. And he went groping on."

Sinking into the low sage of a steep hillside for mid-day sleep, he lost his lens but did not know it until that evening when he started to kindle his fire. Horror smote him. This seemed to be the finishing stroke. The fickle sun was shining, might shine tomorrow, and another morrow. But fire is life; throughout all the inhabited globe man has fire. By taking away his lens the wilderness had also taken away his fire.

Suddenly in his despair, he determined not to be whipped. There was hope, dangling by a slender thread. Back he toiled in the darkness, retracing all those five miles, a night's journey. At the spot where he had rested he found the lens. The joy left him prostrate.

Back again over those five miles, to his pile of fuel, and before the hasty sun disappeared in a bank of storm clouds he saw fire, felt fire. He was not whipped yet.

Brand in hand, for the sun, as if in mockery, was refusing to shine at all, he rambled on. His thistles were gone, his pouch was empty; he had contrived a hook with the bent rim of his broken spectacles and a line of ravelings, but the trout held aloof. Food, however, was of less consequence than fire.

A man—at least—a man animal—five days at a time without food in a country where fur, fin and feather abound; three days at a time without water in a country flush with springs and streams; his sole sustenance, during more than five weeks, thistle roots, one snow bird, and the tip of a gull's wing. But he kept going, relentlessly opposed by an offended nature that appeared to be bent upon destroying him.

There is that something in man, call it the soul; in brute, instinct; and when the twain are stripped to the one impelling motive the difference is very slight. It kept him going.

He was exceedingly weak, rather confused, and quite blind. All his movements were mechanical. He was aware that a lion had been following him, but that gave him small concern. His mind was focused ahead, not behind. The snow was icy with sleet, the ground rose before him, and down he slipped. But he must make on, on, always on. He had to climb this hill. Once over the hill he would make it. And he went groping up.

From across the gulch two other men, mounted, saw a black shape upon the snow here. A bear! They were about to try a shot; then instead they rode in chase. It was not long before they were gazing down upon this thing—a human, indomitable thing, dragging itself by elbows and knees up the mountain-side, and stubbornly moaning. A thing, but a man.

They cried out his name in astonishment, for they had long ago ceased to hope for him; lifted him with one hand, and took him to camp, and fire, and nourishment. A little later they killed the lion nosing about the very spot where they had rescued him; a lion puzzled, and afraid.

The man was the Honorable Truman C. Everts, once United States Assessor for Montana Territory, and member of the Surveyor General Henry Washburn government expedition that in the fall of 1870 explored Yellowstone Park. He had been lost, as above recounted, for thirty-seven days!

A Faithful Witness Tree

By SAMUEL J. RECORD

IN THE year 1830 the original United States survey was made between what is now Pasco and Pinellas counties, in Florida. Nearly 85 years afterward a cypress tree growing on this line was cut down and proved to be one of the witness trees upon which the location of a section corner was recorded. The accompanying illustration shows the inscription.

The customary method of marking a corner in a timbered region had been followed. A thrifty tree near the corner was chosen, a portion of the bark removed, and the description carved in the exposed wood. The instrument used for this purpose, called a "scribe," has a small curved blade and a compass point, permitting any combination of circles and straight lines to make the necessary letters and figures. The work can be done very quickly.

To the left in the illustration, the original inscription, R 17 E, T 26 S, 36, is clearly legible.

This means that the tree marks the corner of section 36, township 26 south (of base line), range 17 east (of Tallahassee meridian). The field-notes would show the



exact location of the tree with reference to the corner which it "witnesses." No other kind of monument could have served better the surveyor's wish to make his field lines permanent.

The picture also shows a cast of the inscription made by the new wood which grew over and into it.

Col. Greeley Refutes Baum Charges

Chief Forester Declares Writer of Articles Attacking Forest Service Dealt in Misstatements and Half-Truths

COLONEL WILLIAM B. GREELEY, Chief of the United States Forest Service, in a letter written under date of September 16 to Congressman Clarence MacGregor of New York, reviewed the recent articles published in the *Outlook*, charging that the National Forests are burning up, and that the Forest Service is concealing from Congress and the public, its failure adequately to protect them from fire. The Forester's letter was in response to a request by Congressman MacGregor for the facts underlying these charges.

The articles in question were written by Arthur M. Baum, a former member of the Forest Service. In taking up his charges, Colonel Greeley for the first time throws some public light on the writer's record as a member of the Forest Service. He says that Mr. Baum was employed by the Forest Service for fourteen years and that "on December 7, 1926, Mr. Baum, being confronted with the alternative of answering charges of personal financial irresponsibility which in the judgment of the District Forester had affected his standing and usefulness as a forest officer, resigned his position as the forest supervisor of the Kootenai National Forest." Mr. Baum's articles were published after he left the Forest Service.

Referring indirectly to the apparent acceptance by the editors of the *Outlook* of Mr. Baum's assertions as statements of fact, and their editorial advocacy of a complete reorganization of the Forest Service, Colonel Greeley said: "So far as the Forest Service is aware, the editors of the *Outlook* have formed judgment in this matter on the basis of the statements and opinions of Mr. Baum."

The writer's experience in the Forest Service, Colonel Greeley points out, was confined to the northern district, and his charges are directed primarily toward that district, which is recognized by the Forest Service as the region of greatest fire hazard and greatest difficulty in fire prevention and control. Taking up specifically some of Mr. Baum's most serious charges, the Forester said:

"Let me review for you some of Mr. Baum's statements and charges and point out wherein he has done the Forest Service an injustice by misstatement, error, or by presenting but half truths.

"Mr. Baum says: 'The simple fact is that the timber belonging to the nation is burning up 25 per cent more rapidly than it is growing.'

"This is not true. It has never been true at any time in the history of the National Forests, even including the unusually bad forest fire years of 1919 and 1926. * * * *

"The average loss of merchantable timber annually over this eight-year period (1919 to 1926) is less than three-fourths of

one billion board feet. It is estimated that the annual growth on the National Forests is six billion board feet. The average area burned over annually, therefore, is but one-eighth of the annual growth, and not even in the worst year has fire destruction approached within 70 per cent of the growth replacement."

The National Forests are grouped in eight different districts and in only one of these eight districts, Colonel Greeley says, has the amount of timber burned during the past eight years exceeded the annual growth. This was in the northern district, embracing Montana and northern Idaho, where the greatest fire hazard exists. Three-fourths of the fire loss, during the eight year period, Colonel Greeley says, occurred in 1919, one of the three most serious fire seasons in the history of the National Forests.

As evidence of the improvement made in the fire-protection organization of the Service, Colonel Greeley points to the fact that although the fire season of 1926 was equally as bad as the season of 1919, timber losses were held to 25 per cent of the 1919 figure. Eliminating the catastrophic year of 1919, the Forester shows that since 1920, the average annual fire loss in this northern district has been less than one-third the annual growth.

Continuing, he says:

"Mr. Baum also states:

"That the Forest Service has failed to appreciate its task of suppressing fires in its true proportions—that it has failed to report the facts to Congress and the public—that it is complacent in its reports—satisfied with its own progress—that it stubbornly persists in false economy in preparation and then indulges in wild extravagance after the fires break out."

"Before the creation of the Bureau of the Budget, the Forest Service presented its needs at the annual hearings before Congressional Committees on the Agricultural Appropriation Bill. Since the creation of the Budget, this opportunity is afforded in both Budget and Congressional Committee hearings.

"The hearings before the Director of the Budget are not matters of public record, and the decision of the Director as to the amounts that it will be consistent with the fiscal policy of the administration to seek from Congress are final for the departments and may not be reopened through the action of Bureau representatives when the Congressional hearings are held. Unless, therefore, the Director of the Budget should choose to comment on the charge that the Forest Service has not urged vigorously the need for larger appropriations than those submitted by him to Congress, it is impossible to cite evidence on that matter beyond the figures showing our original estimates submitted to the Secretary of Agriculture, in comparison with those finally submitted to Congress.

"On the other hand, the hearings on the Agricultural Appropriation Bill before Committees of Congress are embodied in public documents and the Forester's annual report is printed and distributed to the public. A brief perusal of these records so far as they pertain to the Forest Service will refute Mr. Baum's contentions on these points."

Colonel Greeley then cites numerous instances where he, and his predecessor Colonel Henry S. Graves, in their efforts to secure from Congress more adequate appropriations for fire protection, have each year laid the fire situation before Committees of Congress. The record of these needs comprising some 800 printed pages, Colonel Greeley declares, is proof abundant that the Forest Service "has not concealed its needs nor failed to gauge the fire suppression job accurately."

On December 27, 1920, for example, Colonel Greeley, in presenting the fire situation on the National Forests to Congress and asking for greater financial help, said:

"Unless our protection organization can keep pace with that increased hazard, it is not going to be possible to protect our timberlands effectively. **** Our organization on the National Forests is not adequate to cope with the fire hazard. **** I cannot do anything less than put the exact situation of the business before this committee and submit just what the business needs. **** The Government lands are not now protected as well as private lands in western Montana, northern Idaho, ****. We now are not holding up our end. **** It is up to me to tell you what is going to be the effect of trying to run the National Forests on too low a scale of salaries and with too small funds for sufficient protection."

At the hearing before Congress on February 1, 1922, Colonel Greeley said:

"While we are endeavoring to protect the National Forests at 16 mills per acre, the states of Oregon and Washington have prescribed by statute that private timber owners must furnish adequate protection for their property within a cost limit of five cents per acre. ***** As long as our (the National Forests) protective organization is carried on that footing, we must expect that fires will get beyond control. ***** The progress is too slow to satisfy us. ***** This is the specific point in Forest Service work that I am more anxious to accomplish while I am at the head of the Forest Service than any other one thing—to see the uneconomical and more or less emergency expenditures eliminated."

Referring to the instances where he has described the forest fire situation on the National Forests in his Annual Reports, the Forester quoted the following from his report of 1926:

"The resources available for these common-sense measures of preparedness are now seriously inadequate. The Service is throwing into them all the funds that can be pared off from other activities. Its field officers are coping with one critical fire emergency after another with unexcelled loyalty, determination and physical endurance under most trying conditions. But its efforts to protect the vast public property entrusted to its charge will never be fully availing until much more liberal provision is made for the basic work of protection needed along the foregoing lines."

In the light of the record, Colonel Greeley declares that the Baum charges of failure of the Forest Service to see the job and failure to make known the true situation must be labelled false.

As to keeping the facts from the public, he declares:

"The documents I have quoted are public documents. The Forester's report is distributed to the public, and its more important paragraphs are sent out as news releases and used by leading papers all over the United States. Such widespread publicity was given to the bad fires in the Northwest in 1926 that some of the transcontinental railroads and other business interests severely criticized the Forest Service for overdoing fire losses, and thus interfering with tourist trade. Within the

month, the Forest Service has been criticized by the president of a transcontinental railroad for giving publicity to a series of fires which were then burning in one of the Northwestern States."

Taking up another of Mr. Baum's charges, the Forester writes:

"Mr. Baum also states:

"'The Forest Service of today is all superstructure,' that the overhead is out of all proportion to the productive field force—that funds which should have gone to the field have been diverted to building up unnecessary overhead—that there are in District 1 two bosses to every three productive field men—that this overhead is inefficient, made up of 'old-timers' whose sole merit is seniority and young theorists who fail to recognize common sense requirements of the Service. That the Forest Service 'has signally failed to make maximum use of the money with which it was provided'."

In answering this charge, Colonel Greeley points out that the area of the National Forests and the volume and variety of business within them, have increased steadily since 1911. During the past sixteen years, National Forest receipts have increased from two million dollars a year to over five million dollars a year. In spite of this increase of more than 150 per cent in volume of business and a greatly increased fire hazard, he says, Forest Service appropriations for protection and administration of the National Forests have increased only 55 per cent, or "less than the shrinkage of the dollar." During the period, there has also been a decrease in personnel.

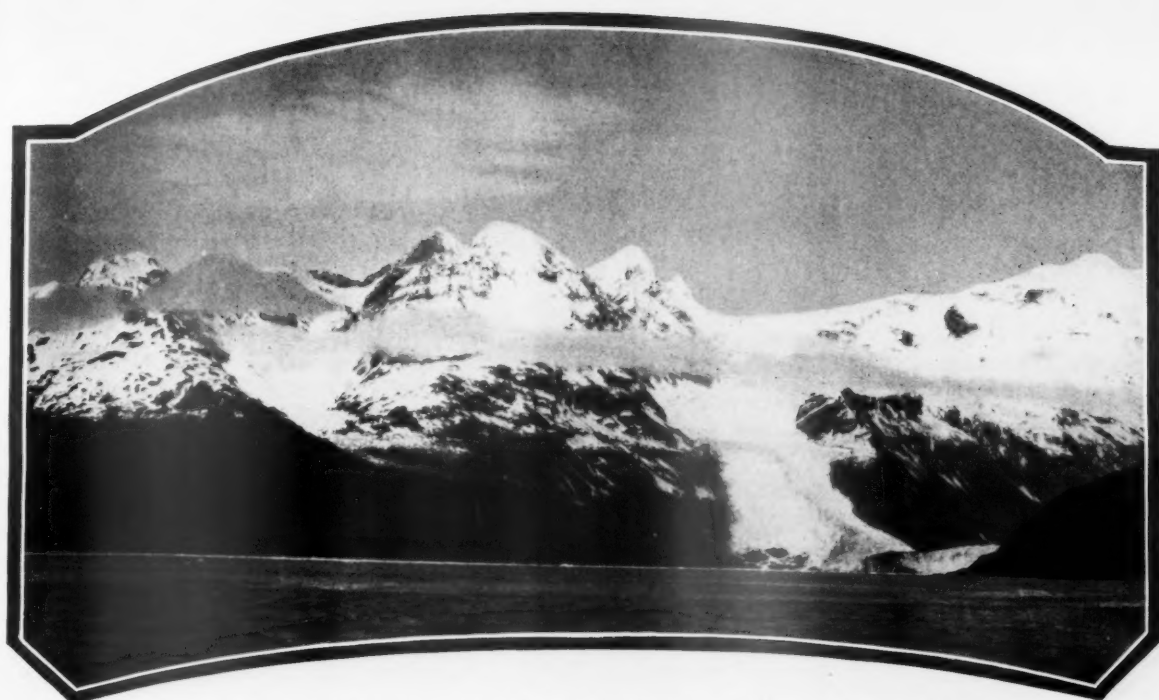
"It would seem that reasonably sound financial management must have been exercised to overcome both shrinkage in purchasing power of our dollars and a tremendous new load of business which has necessarily been handled," comments the Forester. "Not a dollar intended to strengthen field manpower and equipment has ever been diverted to increase salaries of high officials or build up unnecessary overhead. The contrary is true. The Forest Service is prepared to demonstrate a consistent year by year reduction in the force employed in its headquarters office at Washington and paid from the National Forest appropriations.*****"

That there are two men to boss every three in District 1 or elsewhere in the Service, as charged by Mr. Baum, the Forester declares is not true. "Getting at the actual facts," he says, "it is found that in 1926 on the National Forest of District 1 there were employed 816 Fire Guards and 219 Forest Rangers, timber sale men and other direct workers. ***** The productive field men in District 1 total 163 but 1,035. Next on these National Forests we have 57 clerical workers. ***** Added to our 1,035 we now have a force to be 'bossed,' as Mr. Baum would term it, of 1,092 men."

Colonel Greeley points out that the supervisory force on these Forests, consisting of Supervisors, Assistant Supervisors, logging engineers and technical assistants, number only 64, while the investigative and administrative workers in the District Office number 26, making a total of 90 men to supervise and direct a far-flung field organization of almost 1,100 men.

"To the charge that our 'overhead' is inefficient and poorly selected," the Forester says: "I shall only assert that throughout the entire Service the policy and practice is to construct the supervisory staff by merited promotions from the ranks. There is not in the Forest Service today a single man in an important supervisory place who has not a tested basis of experience in the Service which has fitted him for the place he occupies. I shall not bring in individual personalities, but simply assert that Mr.

(Continued on page 702)



The beautiful glaciers of Barry Arm in Port Wells—Tidewater glaciers alive with the dynamic forces of Nature, in mountain scenery unsurpassed anywhere

Cruising Amid Fiords and Glaciers

By H. J. Lutz

DURING the summer of 1925 while engaged in timber survey work on Uncle Sam's most northern forest,—the Chugach—I had an excellent opportunity to know rather intimately the region known as Prince William Sound in southeastern Alaska. It is a region which has never failed to deeply impress all who have seen it from the earliest white explorers of the 18th century down to the present day globe-trotter who is looking for "something different." It is a region of rich historical interest. In the early days it was the scene of great activity, and in one short summer was claimed by explorers in the names of at least four different countries. Such men as Cook, Artega, Zaikoff, Fidalgo, Malaspina, Vancouver, and many others visited it and all marveled at its wild magnificence.

It was in this region that the Russians had their base when they were exploiting the sea otter in the early days. Old native villages may still be seen, although they are now but shadows of their former importance—Nuchek, Chenega, Kiniklik, Tatitlik—there is romance and music in the very names.

While this is all interesting, the things that impress one most in this ever-new region are the immense tidewater glaciers, the sinuous fiords, and the mighty moun-

tains that rear their jagged heads high above the clouds.

From the middle of May until the middle of September, with a party of four men aboard the chartered gasboat "Buckeye," we cruised over 2,600 miles on the Sound. We visited every bay and fiord from Port Bainbridge on the south to Eaglek Bay on the north, and covered numberless small islands and several large ones.

Leaving Cordova on May 19th we went first to Montague Island. This is the largest island on Prince William Sound, and together with Hinchinbrook Island, separates the Sound from the open sea. Both islands are noted for their tremendous brown bears, which are among the largest living carnivores. We made a reconnaissance of Hanning Bay and McLeod Harbor on Montague and were surprised to find snow to a depth of from four to five feet along the beach. Farther back it was even deeper. The coast line of this island is slowly sinking beneath the sea and in some bays a submarine forest of stumps may be seen at low tide.

Leaving Montague we started a reconnaissance up along the west side of the Sound and it was there that we began to see the glaciers. Some of the fiords that penetrate deep into the mainland were still choked with



An ancient village---Chenega, in its picturesque setting



The shores of Montague Island are sinking into Davy Jones' Locker

ice, preventing our entering. These were visited later after the ice had broken up and drifted out.

Since many of the bays and fiords were uncharted we proceeded carefully and felt our way usually into such places on an incoming tide. For if a boat touches a reef or rock when the tide is falling you are usually there to stay, but when the tide is flooding you only have to wait a short time and the boat will be afloat again. Because of this we usually anchored as soon as the tide began to drop unless we were in familiar or charted waters.

In Blackstone Bay we saw the mighty glaciers, Tebenkof and Blackstone, both of which are fed by immense ice fields. We entered Passage Canal on June 1, one of those beautiful, warm clear days such as occur only in Alaska. It was dead calm and the dark green water was as smooth as a mirror except where broken by the white wake that trailed astern. Near the head of the canal were two waterfalls which leaped out into the sunshine and fell in a smother of mist into the bay below. Myriads of seagulls were flying back and forth through this mist which glittered with all the colors of the rainbow. High up on the bare rocky cliffs we could see hundreds of birds nesting peacefully while their fellows were playfully screaming and chasing each other back and forth through the clouds of mist.



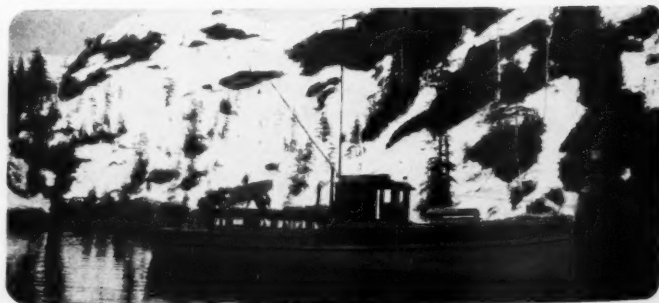
Far up the slopes we could see Whittier, Billings, and Poe glaciers, and other smaller ones. In the warm mid-day sun they exhibited the most beautiful shades of blue imaginable. The larger caverns and deep crevasses were of a most vivid deep azure blue color. It's a color you can't describe—you have to see it.

Leaving Passage Canal we entered Port Wells. Those who have seen the fiords of Norway, and the Alps of Switzerland, and who are otherwise competent to judge, say that for robust mountain scenery, beautiful fiords, and majestic glaciers Port Wells with its two arms, College and Harriman Fiords, has not a rival anywhere. Barry Arm and Harriman Fiord present a wonderful galaxy of tidewater glaciers which impress one at once with the great dynamic forces of nature. When these glaciers are "working" during the summer continuous booming and roaring is heard as massive blocks break off the face of the glacier and go cascading to the icy waters below. Tons of water are thrown skyward to make rainbow hues in the sun.

Apparently wild life, too, is impressed with these wonderful manifestations of nature. Wild fowl of many kinds were seen. Numerous hair seal were sunning themselves on the ice but efforts to get close enough to photograph them proved unsuccessful, for they would slip off the ice and disappear beneath the chilly waters.



Icebergs afloat---With all the grace and beauty of Arctic birds



Our good ship "Buckeye" at anchor in McClure Bay, in June

In a few minutes a sleek, glistening head would appear at some distance as one of them came to the surface.

In College Fiord ice was encountered so we proceeded at slow speed to avoid any of the bergs. A short distance above Coghill Point we witnessed a sight that struck us all as uncanny and unreal. The water in the fiord was unbroken by the slightest ripple yet even as we looked a large iceberg ahead of us slowly and majestically turned over, as if moved by some unseen hand.

A grand array of glaciers meets your eye as you near the head of the fiord. All of these glaciers are named after eastern colleges, the two largest at the extreme head being Harvard Glacier and Yale Glacier. While the glaciers are so immense that you almost have to look twice to see them, they form but a part of the picture. Mighty mountains rise from tidewater to heights of 10,000 and 13,000 feet. With their jagged, saw-toothed heads cloaked in the purest of white snow, now reflecting all the glory of the summer sun, now obscured as they are bathed in a sea of clouds, they make one of the most sublime pictures that a mortal ever gazed on. As the long northern June day fades into the mellow dusky twilight which seems to fill all of the bays and fiords these



Serrated, snow-clad peaks in the background, here at the mouth of Granite Bay



Tidewater glaciers, and the ice-locked mountains of Port Nellie Juan



The snow-clad slopes of Blackstone Bay reflect in purest white the glory of the Summer sun



Magnificent is the rugged beauty of Kings Glacier, at the head of Kings Bay

higher peaks still stand out in the cold ethereal light as they are flooded in the delicate pink glow of the last rays of the sun. It truly is a picture that one can never forget.

The largest glacier on the Sound, and probably the most spectacular, is Columbia glacier at the head of Columbia Bay. This tremendous ice field has a semi-circular front of about four miles, most of it along tidewater. About two and one-half miles of this front is a nearly vertical ice cliff 400 feet high. The mighty Chugach range of mountains with its serrated snow-clad peaks reaching up into the sky forms a fitting background for this noble glacier.

While there is a wealth of ever-changing scenery on every hand there are other attractions for the out-door lover in this region. Bears and other big game are to be found on the mainland and back inland on the larger rivers.

Early in the summer one of the party killed a black bear which had a small cub. He returned to the boat and told us about the cub. We decided it would make a fine mascot. Returning to the place where the bear had been killed, we found the cub watching our approach very suspiciously. He immediately climbed a large hemlock tree and from that

vantage point regarded us in a cold, speculative sort of way. We tried to scare him into coming down and even resorted to hiding, hoping that he would think we had gone. But all to no avail. It was plain that while he might be "a babe in the woods" in years, he even then had acquired considerable worldly wisdom.

Rather than be outwitted by so small a cub I agreed to climb up and get him. Right there I made a big mistake! I took a sack to put him in and started to climb up. The cub was either a mind reader or he discovered my intentions in some other way for he, too, started to climb higher in the tree. In a few minutes I found myself almost at the top with the black furry bundle just above me. I glanced down to see what the other fellows were doing and saw three broad grins, each of which seemed to say "Go ahead, we want to see you catch him!" My bear catching desires were at a low ebb.

But the cub appeared so small and tame that it looked easy after all, so I climbed up face to face with him. My black friend did not seem to care for such intimacy and immediately proceeded to tell me so. After dropping the sack and laboriously recovering it several times I finally managed to pull him from the limb he was on and stuff him in. He came out of the encounter in better shape than I, for his was the honor of first blood. Catching a cub bear in the top of a tall tree is just like handling a whole flock of biting, scratching

cats! During the time which had elapsed from my appearance in the top of the tree until the cub was safe in the sack my alleged friends below were dividing their time between cheering for the bear and giving me advice on painless bear catching.

We took Bruin aboard the "Buckeye" where he at once forgot about his ill treatment when we fed him with milk and honey. He was never exactly pleased with his new surroundings and would often spurn the food we gave him, preferring the more delectable skunk cabbage roots which we occasionally dug for him. Civilization never impressed him very favorably for one day he jumped overboard when no one was looking and swam ashore, and that was the last of our mascot.

During the early part of September our work took us up to the head of Port Nellie Juan, one of the largest of the fiords on the Sound. For miles below the head of the bay the water is milky white from the finely ground glacial silt it carries in suspension. One cannot but marvel at the carrying power of these glacial torrents. There is a continual rumble as large boulders are rolled along the bed of the stream at a surprising rate of speed. Blocks of ice from the glaciers float down in an endless procession, now stranded in an eddy near the shore and now bobbing up and down in the center of the roaring river. Crossing these streams is difficult and hazardous since the silt makes it impossible to see the bottom and the constant shifting of the bould-



One of the timbered slopes on
Prince William Sound



Our mascot was a good sailor,
and liked the high places



We found a natural refrigerator
and cached our moose meat



Two waterfalls near the head of Passage Canal leaped out into the sunshine and fell in a smother of mist into the bay below, while myriads of seagulls flew back and forth, and high up on the rocks hundreds more nested peacefully

ers on the bed makes it difficult to keep your footing.

While working in this region I killed a moose and after packing all the meat out was at a loss as how we could best take care of it. Facilities aboard the boat were limited. Well, there was plenty of ice handy so it should not be very difficult. We could just as well cache some of it in one of the glaciers. That was it, natural refrigeration! So we loaded three of the quarters in a skiff and landed them at Falling Glacier, the most accessible to reach tidewater. A small crevasse in the glacier, well up above high tide line, seemed to afford a good place for a cache. Steps were chopped in the almost perpendicular ice front so we could climb

up and the meat was hauled up on a line. After packing the meat away some ice was chopped down so as to completely cover it. Left in this natural refrigerator the meat kept in excellent condition, and we didn't have to replenish the ice once.

For the person who delights in rugged mountain scenery, amid glaciers and inland seas, southwestern Alaska should make a special appeal. Here one may know the delights that come only to those who leave the beaten paths of tourist travel and have more intimate communion with nature, for there is sure to be something new and different awaiting in the magic region of Prince William Sound.



THE FOREST LEGION

Mountain nights are lonely—often I'm afraid,
Thrilling to the terrors that the dusk has made.
But the day is fortified; all my fears decline
When I see my army of seven thousand pine.

Enemies surround me, lurking foes that hide
In the rocky fastness of the mountain side;
Yet my legions guard me—grim and proud and still,
Seven thousand pine trees, marching up a hill.

—Phyllis McGinley



The King of Birds

*When the Wild Woods Go,
the Wild Turkey Goes*

By ALEXANDER SPRUNT, JR.

THE glory of the sunrise was touching the quiet beauty of river, field and forest. The slanting rays searched out every detail of the far-flung rice fields, the shimmering surface of the tidal river, and the vast stretches of fragrant pineland and swampy backwater. Another day had dawned upon the Low Country and, happy at its coming, the dwellers of woods and fields hailed the radiant orb with characteristic fervor.

Over the emerald rice fields, blackbirds fluted their liquid calls; a noisy kingfisher, from his perch upon a dead snag, voiced his rattling note, only to be silenced by the guttural squawking protests of the coots and gallinules. As the light grew stronger, it caught in metallic passing flashes the brilliant plumage of the fleet wood ducks as they darted over the rice fields and disappeared into the gloom of the cypress trees.

At the edge of the flooded lands, where waving sawgrass gave place to majestic trees, the wine-colored water of the canals led far back into the dim fastnesses of the forest. Straight, tapering trunks of cypress, gum and ash, soared heavenward; buttressed "knees" protruded here and there from the rich swampy loam, while from the boughs far overhead the graceful banners of Spanish moss swung gently in the jessamine scented breeze. High above the lofty tops of the forest monarchs, a soaring kite swung in ever-widening circles, till it became but a speck in the arching dome. A brooding silence, broken only by the squawk of a heron, the thin scream of a passing hawk or the sweetly trilling note of a warbler, lay over the sun-splashed forest.

A gently sloping corner of highland, reaching down into the still waters of the cypress-bordered pool,



THE SOUTHERN DOMAIN OF THE WILD TURKEY

The wild turkey in the South is dependent upon the moss-hung woods and pine lands of the low country, and will hold its own to a surprising degree as long as there is a forest covert to give it protection.

seemed to beckon one back into the pines. The massive trunks, furrowed by years of peaceful solitude, towered a hundred feet above the needle-strewn ground; a gentle murmur floated down from where the wind stirred softly through the swaying boughs. In a small glade opening out among the trees, some little distance from the still canal, an irregular splash of sunlight fell upon the carpet of needles. In the center of this patch of radiance stood a bird.

A bird of magnificent and regal poise, a king of the southland forests. The small head was held high in statuesque pose, the epitome of the alertness of the wild thing in its native haunts. The sun's ray broke in scintillating, bronzy reflections as it struck the great bird's back and sides, glinting upon the black, hair-like beard depending from the breast. The keen, expressive eyes searched the shadowy recesses of the trees with piercing gaze. It was the king of American game birds, the wild turkey, in his domain of swamp and pine land.

Surely, a picture well calculated to stir the admiration of every lover of the great outdoors. And yet, as we look upon it, the sinister doubt, the lurking fear, continually cropping out and coming to the surface, intrudes itself upon all who are really concerned about the future status of our forests and their dwellers. Will this picture remain for our children to see, or will it fade into oblivion, as so many like it have done in the past?

In many sections of the country both the center and the setting of the picture have disappeared forever. There are neither forests nor turkeys. Will it be the same in the southland? The turkey, above all our game birds, with the exception of the ruffed grouse, is absolutely dependent upon the forests. When the woods go, the turkey goes; as long as the forest stands, the turkey will, in favorable localities, hold its own to a surprising degree. Indeed, for so large a bird and one so persistently hunted, it is really a marvel that it exists in its present numbers. True, it has been routed out of much of its original range, which embraced almost the whole of the United States, but there are still places where it is abundant. The writer is fortunate enough to live in a section where this is the case,



WHAT A SPLASH OF SUNLIGHT REVEALED
In a small glade opening out among the trees, stood a bird of magnificent proportions, his small head held high in statuesque pose.

and has given considerable thought to the future welfare of this kingly bird. There has been some agitation locally as to whether or not there should be a closed season on the turkey, but the pros and cons of the question need not be entered into here. Suffice to say that, if this course had been followed in some sections, the turkey would still exist in reality instead of memory. There is no doubt but that the wild turkey is an adept at self-preservation, but it is waging a losing fight. With its faculty sharpened by years of persecution it has become among the wariest of the wild kindred, and to stalk and kill one nowadays is the acme of woodsman-ship. However, its great size, its highly desired flesh, and the thrill of bagging such magnificent game continue to spur many to its pursuit, with the natural result that it is becoming steadily scarcer. In all conscience, the turkey has enemies enough. Disregarding the human element, its



WHERE WARINESS IS PUT TO THE TEST

Despite the fact that the wild turkey is among the wariest of the wild kindred, it is making a losing fight for existence throughout great sections of the South, because of the disappearance of the forest, its natural covert.

natural foes are many and effective. Nature has given it some degree of protection in that, like all gallinaceous birds, it will lay a large number of eggs. But by breeding on the ground the nests are constantly open to the attacks of marauding wildcats, foxes and other mammals, which heartily endorse turkeys' eggs as an article of diet. Therefore, from fifteen to twenty eggs are not uncommon as a natural nestful. In marked contrast, witness the arboreal nesting birds which, as a rule, lay from three to six eggs. Their nests are better protected; their young remain in the nest for weeks. On the other hand, young turkeys run about almost as soon as they hatch. Consider the chance a turkey has of raising a brood amid the dangers already mentioned, to which we must add the risk of the elements, and we will readily see that the percentage of young to reach maturity is small indeed.

Turkeys are not wide rangers; they spend their lives in very restricted localities. Therefore, the cutting out of heavily timbered regions is a serious menace, if not fatal to their existence. A great forward step was taken when hunting them from a "blind" was prohibited. This

was pure slaughter, as a glance at the method will show. A favorite spot was chosen and baited with corn until the birds came regularly for food. Then a slight trench was made, the corn strung out in it and, before day-break, the hunter ensconced himself in the blind a few yards from the bait. When the turkeys appeared and began picking up the corn from the trench, the hunter waited until four or five heads were in line and blazed away, often killing many birds at a single discharge. At this rate, the supply of turkeys could hardly be expected to last long. Now they can only be hunted with trained dogs, who "tree" the turkeys by barking, so holding their attention until the hunter can slip up through the woods and shoot. Another method is by stalking the birds.

If we are to have the wild turkey we must save the forests, and the friends of the one are friends of the other. If the forests are to go, the turkey will fade forever from the swamps and pine lands of the Low Country. It is fading from the valleys of Virginia and the mountains of North Carolina. It has long since faded from the upland woods of New England.

A Pine-Cone Ball

By W. R. MATTOON

"IS it natural?"

"Yes indeed, produced by nature just as you see it—not a popcorn ball, but a pine-cone ball of an ambitious shortleaf pine. The stem looks like a whittled broomstick, but it is a natural branch cut off with a jack knife, round and covered with grayish-brown bark. It ends somewhere inside the ball which is oblong and symmetrical in shape all the way round.

The cones are perfect and about normal size for the shortleaf pine (*Pinus echinata*). At the base of most of the cone-scales are two pits or cavities where the seeds grew. They were perhaps good, or fertile, seeds.

About four cones in a cluster is the usual high-water mark of production for a pine tree. But this tree produced a cluster of 79 cones which measured five inches in diameter crosswise and six inches lengthwise.

This interesting multiple pine cone grew in the Piedmont region, Cleveland County, North Carolina, and was exhibited at the local 1926 Fair. By chance, the writer came across it while engaged in farm forestry extension work in the county. It has recently found its way to the wood technology section of the National Museum, Smithsonian Institution.

A freak, a monstrosity, an abnormality, showing nature does not always run true to form! Evidently the tree was trying to reproduce itself in large abundance. Observing this feature, a scientist to whom the cone ball was shown, exclaimed "Hum, what a polyrifiration of reproductive parts!"



A TRAFFIC JAM ON THE PINE HIGHWAY



SURROUNDED BY CLIFF-DWELLING VILLAGES, THE EDWIN BRIDGE IS THE MOST SPECTACULAR IN UTAH. THE GIANT ARCH IS THIRTY-FIVE FEET WIDE, BUT DOES NOT EXCEED TEN FEET IN THICKNESS AT MANY POINTS

Nature's Giant Bridges

By GUY ELLIOTT MITCHELL

THE discovery of a giant natural bridge must be as thrilling to a man as the finding of a lucky stone at the sea shore is to a tiny boy or girl—a stone with a round hole in it. Incidentally, both natural phenomena were formed by the erosive action of running water.

Natural bridges, many of tremendous dimensions, abound in the United States. The Bad Lands of North Dakota hold a number of large natural bridges carved out of the sandstone. New York and Pennsylvania have several fine natural structures. Tennessee has a big natural bridge. Near Zuni, Arizona, there is a stone bridge so inaccessibly situated that it is impossible to get a photograph of the entire structure; in the Mukuntuweap country of the same state there is another massive natural bridge high up in the escarpment. Another part of Arizona has an entirely unique bridge formed by a huge petrified tree spanning a narrow canyon.

For a hundred years no American geography has been published that has failed to picture the Natural Bridge of Virginia, early made famous by our first President who, as an athletic young surveyor, climbed high up within its stone arch and there inscribed his initials. Almost every State has its natural bridge or bridges of greater or less fame. However, it is in the ultra desert region of southeastern Utah that we find the great natural bridges of the world, bridges

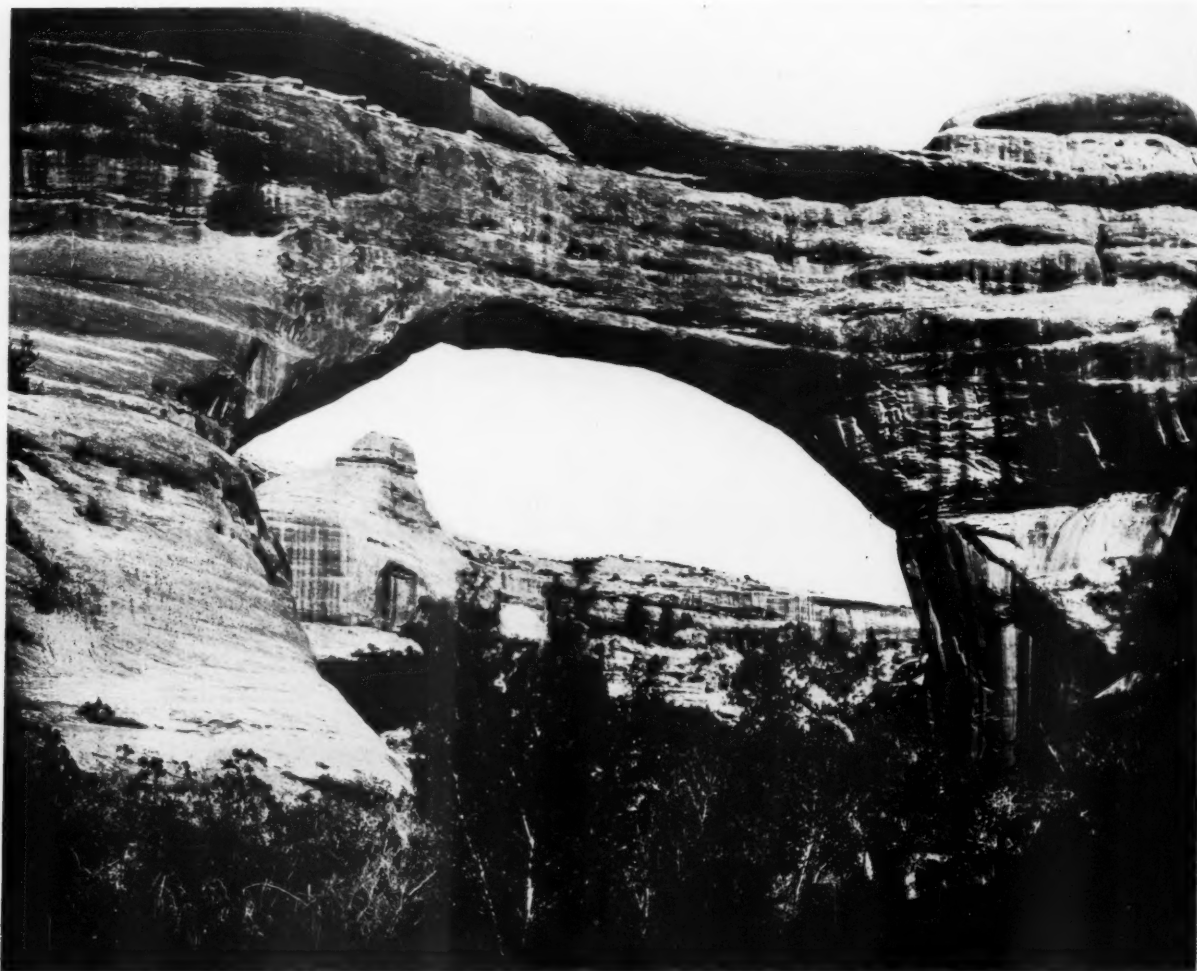
so huge that they far surpass all instances of human bridge building.

It was only a few years ago that three gigantic stone bridges were uncovered in Utah, scores of miles from civilization, in the midst of a silent desert. At the time the discovery was held as another fanciful western tale, but further exploration removed all doubt and revealed these curious and awe-inspiring sandstone formations, as the witchery of wind and water through the long ages. Before this discovery it had been rumored that huge natural arches existed in the far interior of the Utah deserts, and it now seems probable that one or more of them were known to exist. Many people believe that the Indians knew of the bridges and had names for them, one at least being considered in some manner sacred and called the "Arch of the Holy Dancers."

From the best accounts it appears that a miner named Long and a cattleman known as Scorup were the actual discoverers of the three bridges, making photographs and measurements, and passing one night in a long abandoned cliff-dwelling village near one of the bridges. The great arches were named by these men, the "Edwin," the "Carolyn," and the "Augusta" bridges. From Scorup's statements it seems probable that the bridges had never been seen by any white men save perhaps a half dozen cowboys and possibly an occasional fugitive from justice who may have

retreated to these wild solitudes. Several years later a hardy officer of the United States Land Office organized a party and definitely located the bridges amid the wild regions of San Juan county. Later they were photographed and accurately measured. By Presidential proclamation these natural wonders have

200 feet. It is "little" only in comparison with its sister giants. Three wagons could across it abreast, its arch measuring 35 feet in width. At its thinnest point it carries only ten feet of stone. Surrounding it are domes and turrets, carved by the same Master Hand that shaped the bridge, while nestling in a cave,



THE AWE-INSPIRING ARCH OF THE SIPAPU BRIDGE, ALSO KNOWN AS THE AUGUSTA BRIDGE, IS 222 FEET IN HEIGHT AND HAS A CLEAR SPAN OF 261 FEET. IT IS SAID TO BE THE MOST BEAUTIFUL NATURAL BRIDGE IN THE WORLD AND ONE OF THE GREATEST NATURAL SPANS

been included in a National Monument, to be preserved forever. But more recently they have been somewhat eclipsed in grandeur by the discovery of the Nonnezoshi Bridge, also called the Rainbow Bridge, a huge arch which is believed to be the greatest and most wonderful natural bridge in the world.

How were these vast bridges formed? Overlying the southeastern portion of Utah are great beds of sandstone and in the early ages of the world the waters from the mountains carved this comparatively soft formation into innumerable fantastic shapes. The Edwin, or Little Bridge, thus sculptured by Nature's irresistible forces, is 108 feet high and has a span of

worn in the sunny side of a cliff near one of its abutments is a less pretentious though perhaps equally impressive handiwork, a deserted cliff-dwelling village.

In contrast to the light structure of the Edwin Bridge, there stands, about three miles down its canyon, a massive archway of sandstone, the Carolyn Bridge. The span of this great structure is 186 feet; its height is 205 feet, while the roadway crossing it is 50 feet wide. But the most impressive feature is the great depth or thickness of its arch, which is 107 feet at its thinnest point, giving an effect of massive strength and solidity that dwarfs into insignificance the greatest similar works of man.



THE FAMOUS NATURAL BRIDGE OF VIRGINIA IS POSSIBLY THE FIRST NATURAL PHENOMENA OF THIS KIND DISCOVERED IN THE UNITED STATES. IT WAS HERE THAT GEORGE WASHINGTON, AS A YOUNG SURVEYOR, CLIMBED HIGH UP WITHIN THE STONE ARCH AND INSCRIBED HIS INITIALS

Passing through deep canyons, now dry, and at a distance of between two and three miles from the Carolyn Bridge, the explorers beheld the most beautiful of the three bridges—the Augusta Bridge. This awe-inspiring arch is 222 feet in height and has a clear span of 261 feet. Of all the natural bridges it is the most perfect and seems to have been made by rule; a structure so lofty and magnificent, so symmetrical and beautiful in its proportions as to suggest that Nature, after completing the mighty construction of the Carolyn, had outdone herself in the sculpturing of a perfect piece of architecture. The thickness of the solid stone beam is 65 feet and the width of the roadway is 28 feet. The Augusta Bridge is of white, or very

light sandstone, and as on the Carolyn Bridge, green and orange-tinted lichens grow here and there over the mighty buttresses and along the sheltered crevices under the lofty cornice, giving warmth and color to a wonderful picture.

These three bridges are of one group—the sisters of the Chasm of White Canyon. All about are natural towers and embattled formations, cut and scoured by the forces of wind and water, while in the hollows of the seamed and scarred cliffs are abandoned homes, fortifications, and granaries of a long-forgotten race—the cliff dwellers. Not even dim tradition hints of who or what they were, or what force or conditions encompassed their extinction. Long and Scorup describe camping one night on a cliff dweller's ledge which, contrary to the usual habit of that wary people, was only about 30 feet above the bottom of the canyon and easily accessible. The most perfectly preserved structures were large, round underground receptacles like cisterns—doubtless granaries. The interior walls of these were coated with hard, perfectly preserved cement, and there were great flat stones cut to fit the circular openings. These stones when in place formed part of the floor of the dwellings.

The greatest of all the stone bridges in Utah is the Nonnezoshi or Rainbow Bridge. It is a sandstone arch of huge dimensions; a flying buttress, with one slope of great steepness, standing as a mute testimonial to the stupendous force of Nature's carving. This imposing structure is situated in San Juan County, in a wild and well-nigh inaccessible part of the Navajo Reservation, four miles north of Navajo



THE CAROLYN BRIDGE IS A MASSIVE ARCHWAY OF SANDSTONE OF SUCH GREAT STRENGTH AND SOLIDITY THAT IT DWARFS THE GREATEST SIMILAR ENGINEERING WORK OF MAN

Mountain and near the junction of the San Juan and Colorado Rivers.

The La Plata sandstone, here 1,200 feet or more in thickness, is deeply dissected by a labyrinth of tortuous canyons, and near the mouth of one of these the bridge is found. A towering arch, rainbow-shaped and of model symmetry, rises from a ledge on one side of the canyon, and spanning a small stream, joins the opposite wall on its downward bend. The opening measures 267 feet in height by 278 feet between abutments; but the distance from stream bottom to top of arch totals



THE RAINBOW OR NONNEZOSHI BRIDGE IN UTAH'S GREAT SILENT DESERT IS BELIEVED TO BE THE MOST GIGANTIC NATURAL BRIDGE KNOWN TO MAN. IT IS A HUGE SANDSTONE ARCH STANDING IN MUTE TESTIMONIAL TO THE STUPENDOUS FORCE OF NATURE

309 feet, while the keystone portion is only 42 feet thick and 33 feet wide. The bridge was discovered on August 14, 1909, by W. B. Douglas, of the United States General Land Office, and Byron Cummings, of the University of Utah, under the guidance of John Wetherell and two Navajo Indians. It has

since been set aside as a National Monument and represents the largest and most graceful known structure of its kind in the world. Beneath is an ancient altar built doubtless by the cliff-dwellers, indicating that the bridge was probably an object of superstitious worship.



H. D. Miser, U. S. Geological Survey
HOW THE NATION'S CAPITOL WOULD APPEAR IF PLACED IN THE SPECTRAL WILDERNESS OF UTAH BENEATH THE GIANT NONNEZOSHI NATURAL BRIDGE, THE GREATEST OF THEM ALL

An Oregon Pioneer in Forestry

By ALLEN H. HODGSON

Photographs by courtesy of the Crown Willamette Paper Company

BY continuing the policies now being practiced, the Crown Willamette Paper Company, of Oregon, will never suffer a shortage of raw material. From wood grown on its own lands, it will always be able to make as much, if not more, paper than it is manufacturing today. Present plans provide for the management of its large forest holdings, embracing thousands of acres, not as a mine, but as a farm, with wood as the crop. Briefly, the program, as now worked out to accomplish this end, calls for the development of: (1) machinery and methods for logging that will make profitable the utilization of most of the material now left in the woods as waste, thus prolonging the life of the original timber. (2) Forest nurseries for the growing of young trees to be used in artificially reforesting the logged-off lands as rapidly as the original timber is removed. (3) Protection for the young forest trees from fire and other enemies, so they will reach maturity and form a second crop of pulp-wood for the future. These three basic policies, if adhered to, will make certain a continuous supply of wood for the company. At the present time most of the company's lands are covered with virgin timber, but as fast as this is removed the lumbered area is to be planted to young trees. Since it will require forty to fifty years for them to become merchantable, the company is exercising care to make its old growth timber last that long. Its plan is to cut the virgin timber from not more than one-fiftieth of

the original forest acreage each year. Such a plan foresters refer to as placing the timber lands on a sustained yield basis, with a rotation period of fifty years.

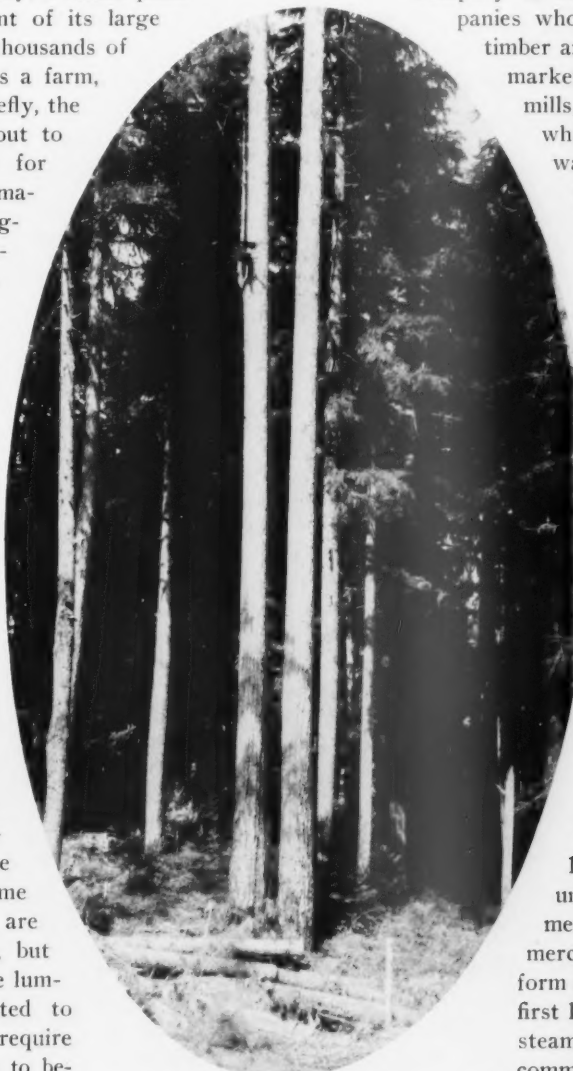
If the rotation period can in any way be lengthened and at the same time meet the annual wood requirements of the mills, the life of the virgin forest will be prolonged and a reserve will be built up to meet unforeseen emergencies. With this end in mind, the company is buying cheap logs from companies who make a business of cutting

timber and selling the logs in the open market; it is purchasing, from sawmills, slabs and small trimmings which usually are burned as waste, and it is developing machinery and methods for logging its own timber that will make profitable the use of very small logs and chunks, ordinarily left in the woods.

Since this plan represents a pioneer movement in a region containing more than half of the remaining saw timber in the United States, it is of interest to note in more detail what this progressive company has quietly been accomplishing. In arriving at its policies, action, based upon detailed study and experiments, and not talk, has characterized its progress.

Experiments for the purpose of securing better utilization in the woods began in 1923. These were continued until 1926, when the experimental work grew into a commercial venture. This took the form of a re-logging operation. The first logging is done with the huge, steam-driven logging machinery, commonly used in the region, which leaves many small pieces of wood behind. The re-logging operation then follows, employing light, mobile, gasoline-driven machines, inexpensive to purchase and to operate.

Caterpillar tractors equipped with drums for letting out and taking up steel cable, by means of which the small logs are pulled to the logging railroad, and



THE COMPANY'S LANDS ARE LARGELY COVERED WITH VIRGIN TIMBER. IT IS PLANNED TO CUT NOT MORE THAN ONE-FIFTIETH OF THE ORIGINAL FOREST ACREAGE EACH YEAR

small donkey engines, worked in the same way, are used. At the railroad the logs are loaded upon cars by a crane mounted on trucks, which is able to move along the track under its own power.

At the present time, the re-logging work is saving from 7,000 to 10,000 board feet of wood to the acre. This is in the form of small and broken logs. Pieces as short as 12 feet and logs with a top diameter of only 4 inches are hauled in and utilized. Over a period of 4 months in 1927 some 4,000,000 board feet of this material was shipped to the pulp plant. Thus a saving of 10 or 15 per cent of the original volume of the forest, which would otherwise be lost, is being utilized, and at the same time the life of the virgin forest is being extended. This work is also clearing and fireproofing the land in preparation for planting the young trees to be done later on.

In 1903 the company established its first experimental forest plantation when 25 acres of land were planted to young cottonwood trees. Two or three years ago these trees were cut and converted into pulpwood. Measurements of the wood removed, not counting the contents of the stumps, showed that the plantation had produced 30,000 board feet on each acre. Since 1903 experimental plantations have been made in various places, but no real progress was made until 1925. The management then employed a technical forester and established a large forest nursery on the banks of the Willamette River, a few miles from its big paper mill at West Linn, Oregon.

The nursery was started with 750 seed beds. In 1926, 1000 additional seed beds were planted. Each of these 1,750 beds is now producing about 5,000 little trees, or a total of some 8,750,000. Planting in the field also began in 1925 when 90,000 young trees were started on 120 acres. In the spring of 1926, 300,000

more trees were planted on 300 acres, and again in 1927 another lot of 300,000 was transplanted to the logged off lands. Preparations are now being made to set out 2,000,000 young trees each year, until all of the company's denuded lands are covered. Estimates indicate that this will be done by 1931. From then on planting will keep pace with the logging.

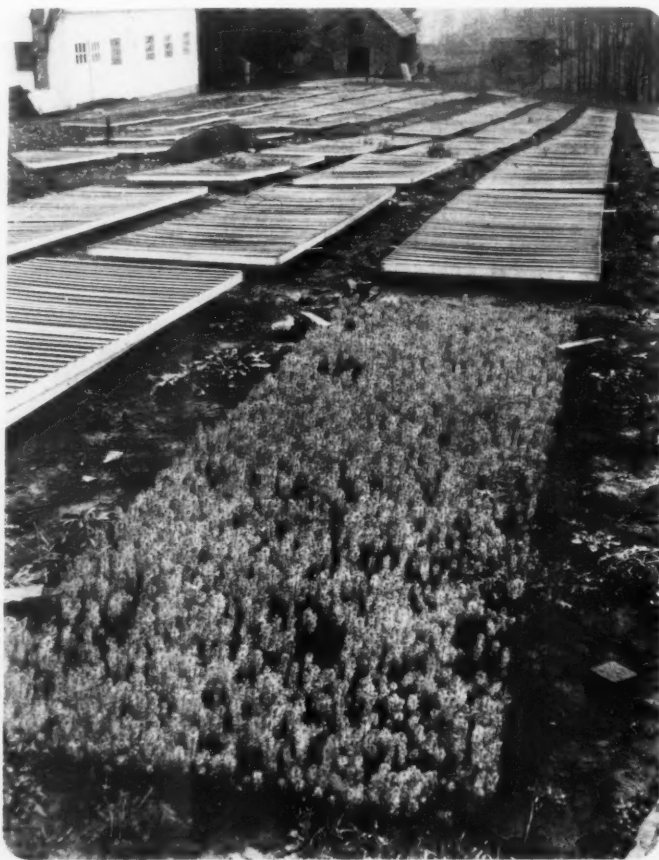
Sitka spruce is used in these plantations almost exclusively, since the genus *Picea* is the premier paper wood. The growing scarcity of spruce makes

necessary the use of large quantities of western hemlock. Hemlock pulp is mixed with a certain proportion of spruce pulp as a binder, because the latter species yields a longer, tougher fibre. In nature, hemlock reproduces well, but Sitka spruce does not, so the paper company is artificially restocking its lands with the more desirable species instead of depending upon the uncertainties of nature.

The protection of these young spruce forests from fire is a very important and necessary part of the program. When logging the virgin timber, all snags higher than 6 feet are cut down to avoid future fire hazards. The removal of large pieces of slash by the re-

logging work, helps to fireproof the land. After logging, the slash fields are burned over at a safe time and the land left for two or three years during which vegetation, in the form of brush, makes its appearance. The planting work is then started, the young spruce trees being set out in the shade of the undergrowth, where they are sheltered from the hot summer sun until they have developed sturdy root systems.

Additional precaution against fire in this newly started forest is taken by surrounding every 40-acre tract with a strip 24 feet wide planted to broadleaf trees, such as alder and cascara. These quickly growing hardwood trees, with their broad green leaves,



THE COMPANY PLANS TO SET OUT TWO MILLION YOUNG TREES EACH YEAR. THESE ARE BABY SITKA SPRUCE, USED ALMOST EXCLUSIVELY IN THE PLANTATIONS, AS *PICEA* IS THE PREMIER PAPER WOOD



THE VIRGIN FOREST AFTER LOGGING. THE SMALL AND BROKEN LOGS ARE SAVED THROUGH THE RE-LOGGING OPERATION WHICH NOT ONLY EFFECTS A SAVING ON THE ORIGINAL VOLUME OF THE STAND BUT CLEARS AND FIREPROOFS THE LAND FOR THE PLANTING OF YOUNG TREES WHICH FOLLOWS LATER



EXPERIMENTS FOR THE PURPOSE OF SECURING BETTER UTILIZATION IN THE WOODS PROVED THAT THE USE OF SMALL CATERPILLAR TRACTORS IN RELOGGING, BY MEANS OF WHICH THE SMALL LOGS ARE SALVAGED AND PULLED TO THE LOGGING RAILROAD, WAS A COMMERCIALY FEASIBLE DEVELOPMENT. THE RELOGGING WORK NOW IS SAVING FROM 7,000 TO 10,000 FEET OF WOOD TO THE ACRE

will soon form a high wall of shade through which a fire will have difficulty in passing. The wood from western red alder has become valuable for furniture and the bark of the cascara, a rapidly disappearing tree, furnishes the drug trade with a valued commodity. Although these trees are not being set out with a view of realizing returns they may prove an asset later. Fire wardens to keep in order roads, trails and telephone lines, for use during the fire season, to rush in large crews of fire fighters whenever the alarm is given, and to see that careless people do not start fires are maintained by the company.

The sawmills of Oregon and Washington are annually producing nearly 12 billion board feet of lumber, to meet the requirements of the great industrial centers of this and of foreign lands. Employment is thus given some 168,000 men and 65% of the entire industrial payroll of the two states is represented by the forest industries. The Crown Willamette Paper Company, by developing these sound forestry policies, is laying the foundation for its own future independence and prosperity. It is also blazing the way toward making the great lumber and paper industries of the Pacific Coast perpetual and everlasting.

Ancient Trees Mined As Coal

By E. WHEELER WHITMORE

IT IS the lumber yield of a million or two million years ago that today produces the heat calories required to raise the temperature in our homes to 70 degrees Fahrenheit, and to keep the production wheels of modern industry humming. Most of those ancient galleries of aged trees still remain, but their form has been altered by time and the work of ages. The conversion of ancient trees into coal, however, is the story of the ages and the ponderous work of time.

All told, the trees of that period—the Carboniferous age—yielded something like 2,000,000,000,000 tons of coal, and today the mines of Pennsylvania, West Virginia, Tennessee, Ohio, Illinois, Missouri, and Texas are producing approximately 450,000,000 tons of coal a year. The trees of that period thrived in extensive swamp areas, similar marshes being found today in the Dismal Swamp of Virginia, on the coast of New Jersey, the Carolinas and Florida. In order to appreciate conditions as they were during the Pennsylvanian, it must be realized that there were no mountains, such as there are today in that territory, but that the land was low, and that sluggish streams meandered through extensive fresh-water marshes. Those large inland seas, Cleland says, were shut off on the east by the Continent of Appalachia, and were bordered by wide fresh- and salt-water marshes, in which vegetation thrived. In the course of a hundred thousand years millions upon millions of trees were felled through natural causes. Their cellular tissue was not affected so much by oxidation, since they fell in the water, where oxidation proceeds less rapidly than in air.

In the course of time, however, the sea came in and covered the territory where vegetation flourished. In receding, the sea deposited large quantities of sediments, ranging in some places from 2,500 to 5,000 feet in height. That put an additional strain upon the earth's surface, and as a particular portion of the earth's crust yielded to this lateral pressure the sediments folded into a great mountain system, extending from Nova Scotia to Rhode Island, and from New York to Alabama. A third mountain system was likewise created in

Arkansas. In some places there was not only a folding, but also a faulting, and as a result anthracite coal is found in those sections, particularly the region about Pittsburgh. But the fact that should not be lost sight of is this: the people of this age are the recipients of a rich heritage—virgin timber in another form, of course—that grew hundreds of thousands of years ago.

The trees of the Carboniferous period belonged to the club-mosses type, of which the *Lepidodendron*, *Sigillaria*, *Calamites*, and *Cordaite*s were prominent members. The *Lepidodendron*, or scale tree, varied in height, its average being over a hundred feet, with a three-foot diameter. The tree was freely branched, and in that respect resembled our present-day trees; but the leaves were entirely different; they were slender and were arranged in oblique rows about the branches and trunk. When the tree shed its leaves their bases left diamond-shaped scars, a distinguishing characteristic of the *Lepidodendron*'s bark.

Sigillaria derived its name from leaf scars on its bark, these scars resembling seals. One of the peculiarities of this tree was that it had no branches, while its leaves were arranged in vertical rows at its crown. In some species the leaves of this tree are said to have exceeded three feet in length. As a rule the trees attained a height of one hundred feet and a diameter of about six feet.

In some respects the *Calamites* resembled the cactus, but they had no branches. The tree was nothing more than a big branch with ribbed bark, this branch sometimes attaining a height of sixty feet. The leaves were thin and were attached to the nodes in whorls. The *Cordaite*s, on the other hand, were large trees, with long, sword-shaped leaves which averaged about a yard in length.

All of these trees thrived in fresh as well as in brackish water, and they grew in levels so close to sea-level that a slight sinking of the ground killed and buried them under sand, clay, or lime ooze. But the fact remains that it is the metamorphosed wood of those trees that now furnishes us with coal.

Maine's Last Caribou Herd

And How They Saved the Life of the Old Kennebecker

By CLARA NEWHALL FOGG

"CLOSE by me they passed, sixty of them, crossing from Holeb Pond by the carry to Attean Pond. They held their heads high and looked straight ahead and came so close I could have touched them. They were the last caribou I ever saw or heard of in Maine. That was over fifty years ago, the time the Civil War closed, when we first lumbered in Jackman."

It was the old Kennebecker who told me the story of Maine's last caribou herd. He was one of the old timers in Maine's lumbering industry, and had spent the best part of his life in the woods of Northern Maine.

"Stronger built than deer and of great endurance, this herd was traveling to New Brunswick and no caribou have been seen since in this state. They were starved out. They ate dry moss and were hunted so much that they were forced to seek new feeding grounds.

"I have always been grateful to them because in all probability, they saved me from sudden death. I was working with the Coburns that year; they were the pioneer lumbermen of Maine and kept one hundred camps in the woods through the winter. Part of my work was to pay off the men in these camps.

"On the border as we were, we had many Canadians in the camp crews, so I usually paid in silver as they liked that better. I always carried the money in two valises that the Coburns kept for that purpose; queer

looking yellow affairs, made to stand wear and tear. There were no safes in the hotels between Skowhegan and Jackman and a man had to look out for his valuables himself. It speaks well for the times that in all my sixty years of lumbering, I never had trouble before. Only this once when the caribou saved me.

"I had been at the Coburns talking business with the brothers. Abner Coburn was Governor of Maine and neither he nor his brother, Philander, was married, but lived together with a housekeeper to look after them. After supper we finished our business talk and were sitting by the open fire when there came a knock at the door and the old darkey servant told us two men had come to see if they could get work in the woods.

"'Bring them in,' ordered Abner. One seemed smarter than the other but the Governor engaged them both. When they turned to go out, Philander eyed them keenly.

"'Here, Brother,' he said 'Call that man back. That one, that one!' he pointed to the smart talking one. 'Call him back! Call him back!'

"He was a great one to bite off his words and to repeat them when he got excited.

"'We don't want you,' he said when the man came up. 'Haven't any place. The other can stay but you can't. Here, that will do, that will do,' as the man tried to speak. 'No place for you. Can't have you.'



"CLOSE BY ME THEY PASSED, SIXTY OF THEM. . . WITH HEADS HELD HIGH AND LOOKING STRAIGHT AHEAD. . . SO CLOSE I COULD HAVE TOUCHED THEM"

"Why, Brother, what did you see that you didn't like?" asked Abner after the man left.

"Didn't you notice? Didn't you see his pants? Real good ones, but when he turned round, there were two big patches in the seat. That proved he wore 'em out sitting down. We don't want any more of that kind working for us. Got plenty now."

"Soon after that I took the yellow valises full of silver and started up river. I always drove my own horse, a little white mare, Kitty, for that was long before the days of the Canadian Pacific or any other road up that way, and all the lumbermen had to drive into the woods.

"I was late starting and after placing the yellow valises under my feet I made good time. When I put up at the first hotel on the road that night, for some reason, the money worried me more than usual. So much that I didn't sleep any. Just laid down and rested. Next night a man I knew was at the place where I stopped, so I made him sit up while I slept part of the time. It was queer, but I had the feeling right along that I was followed. That some one was on my track, waiting to grab those valises. Next day I felt better on account of making up some of my sleep, but I still had the impression I was followed. I had dinner that day at a lumber shack, half hotel and half camp; but I only took a short noon-ing as I wanted to make the first of the Coburn camps that night, at Attean Pond.

"The moon would be up early and I calculated on making camp about nine o'clock. It was frosty weather and I wrapped my woolen scarf well round my neck and with the buffalo coat I wore and thick worsted gloves, I didn't much mind the cold.

"We went over the ground pretty fast and then, all at once, just as I was near where our crews had been yarding, my mare, Kitty, went lame. It always seemed queer to me that Kitty should go lame like that unless she had been doctored in some way while I ate dinner back in the lumber shack.

"Just then, all of a sudden from out the dusk, came a man, loping along in queer fashion. He came from the direction of the woods and hailed me, asking for a ride. Said he had been thrown out by a runaway horse and was in for a night on the road if I didn't give him a lift. For all something warned me not to take him in, still of course I knew the courtesy of the road in that part of the country so I told him briefly to jump in. It was then I saw he was the same smooth faced little man that Philander Coburn had turned down when he asked for work.

"He had on a long overcoat and there was a bulge in it on one side such as a pistol might make. He

kept talking and crowding over against me a little. Once I knew he felt of those two valises in the bottom of the sleigh. All the time he talked I was thinking pretty fast. I knew if he was armed he would be more than a match for me, loaded as I was with my buffalo coat and thick scarf and gloves. He could overhaul me before I had a chance to get at him.

"I answered his chatter as best I could and all the time it kept going through my mind that he was sore because Philander wouldn't give him work; he probably knew about the money as those valises were in the room when he was there and lots of people had heard what they carried on the up-river trips. Most likely this man planned to get the money so as to get even with the Coburns.

"We were coming to the worst place of all where the woods were thickest and I had to think quickly. I raised my whip, pretending Kitty needed to be prodded a bit. As I raised the whip I managed to knock off the man's cap. I stopped, excusing myself, but not until I had pulled on the reins as that always made Kitty go faster, so the man had some distance to go back for his cap.

"When I saw he was near the cap I whipped Kitty and we went on as fast as the lame little mare could go. I turned round and saw the fellow had pulled his revolver and was aiming at me. As the first bullet sang by I noticed we were passing a woods road where they had been side yarding. The man was a good shot and the second bullet came pretty close.

"Then, right out of the woods in that old tote road, came the caribou—sixty of them in the herd, going straight across the road, aiming for a marshy tract near our camps.

"Great figures, white and ghostly in the dusk, they scared my late passenger so that he dropped his revolver and stared stupidly at them. Evidently though a hunter of men he was not so keen on hunting big game. Whatever it was, by the time he recovered from his scare, I was too far away for him to get me.

"The moon was rising as I saw the last of him, standing there trembling in the road, still staring at the swiftly moving herd. That was two years after they said caribou had left Maine for New Brunswick; and I think this herd was on the way to join the others already across the border.

"I made the Attean camp all right but I shall always believe I never would have made it, had it not been for that last caribou herd of Maine coming swiftly down through the dusk of the old tote road."

Watch

For your Xmas number of AMERICAN FORESTS AND FOREST LIFE. It wouldn't be at all in keeping with Xmas to tell what's in store for you but it's not giving away secrets to say that Old Kris Kringle has had a hand in its make-up and if it isn't just like opening a Xmas box, we miss our guess.—Editors.

Eucalyptus

An Australian Tree Immigrant

By WOODBRIDGE METCALF
Associate Professor of Forestry, University of California

ONE of the first things that strikes the attention of the observant traveler in California is the strangeness of the trees and other vegetation. As he goes from place to place seeing new and ever changing types of leaves, flowers and bark, and meeting stranger after stranger in the fraternity of trees in the many parks or along streets and boulevards, he is apt to feel that he is indeed in a different world, so far as trees are concerned. When he does come upon an old friend, such as white birch, silver maple or white elm, they only serve to strengthen the impression of strangeness and complexity of form and habit of growth of their associates in these new surroundings. Among the cone bearing trees, the traveler will

have no difficulty in recognizing such familiar genera as pines, spruces and firs, although the species may be unfamiliar; but most of the broad leaved trees exhibit such new and unfamiliar characteristics, that he is adrift on a sea of difficulties in attempting to recognize them.

It is soon apparent that most of these trees have long, slender leaves thick in texture, and evergreen. Now these features are characteristic of the vegetation of Australia which has developed under a very different combination of climatic and geological conditions than those prevailing on the North American continent. Yet the climate of portions of California is so similar to that of Australia that many tree and shrub immigrants



Putnam Studios, by courtesy All-Year Club of Southern California

THIS WONDERFUL GROVE OF EUCALYPTUS TREES, NEAR SUISUM, CALIFORNIA, IN THE NORTHERN AREA OF THE STATE, IS ONLY TWENTY YEARS OLD. THE "VISITOR FROM AUSTRALIA" IS THOROUGHLY AT HOME. IT FOUND IN THE GOLDEN STATE CLIMATE AND GEOLOGICAL CONDITIONS TO ITS LIKING AND HAS CONTENTEDLY SETTLED DOWN

from that country have settled down contentedly in their new surroundings and are doing their share in adding to the beauty and comfort of this favored land.

Of all of the trees which have been brought from Australia to California, the largest, most beautiful and best adapted to the new surroundings are those belonging to the genus *Eucalyptus*. In Australia there are something over 300 species of this interesting genus, ranging from small desert-land shrubs to massive forest giants of great commercial value. About seventy species have been planted in California and some of these are so common throughout the valley sections of the state that many people imagine they are native. The tall, mottled trunks, massive spreading crowns and drooping, sickle-shaped leaves typify California to a host of people who are unfamiliar with Redwood, Sugar or Yellow Pines, Incense Cedar, or others of her native forest trees. Nor is this strange, for these native species hold themselves somewhat aloof from the haunts of man—they keep back in the mountains and along the foothill sections of the north-coast mountains, while the *Eucalypts* are valley dwellers and seem to be ever present in parks, lawns and along roadsides, and in groves and windbreak plantations.

Very little definite historical evidence is available concerning the introduction of *Eucalyptus* into California, but the date seems to have been between 1855 and 1860. McClatchie, in his bulletin, "Eucalypts Cultivated in the United States," says that before 1860 there were several *Eucalyptus*

trees growing in the yard of a Mr. Walker, of San Francisco, who is said to have made arrangements with a sea captain friend of his to send him seeds from various parts of the world. Shortly after 1860 Bishop William Taylor, of the Methodist Church of California, went to Australia, where for several years he conducted a series of remarkably successful evangelistic meetings. During the course of his ministry in Victoria and New South Wales he became so impressed with the size and

beauty of *eucalyptus* trees that he procured a quantity of seed which he forwarded to his sister who lived in the little town of Alameda, on San Francisco Bay. This lady, with the assistance of a local nurseryman, propagated the seedlings and distributed them to friends and acquaintances throughout the San Francisco Bay region. Thus the first distribution of *eucalyptus* trees in California came about and it was not long until others were importing the seeds in considerable quantities. Incidentally, friends of Bishop Taylor recently dedicated one of the large *eucalyptus* trees growing on the street in Alameda to his memory and to his interest in the trees.

In 1887 the first California State Board of Forestry was formed with Abbott Kinney, of Los Angeles County, as one of its members. He was very enthusiastic about *eucalypts* and induced State Senator Jones, of Los Angeles, to make a gift to the State near Santa Monica to provide a testing ground for a large number of species. Between 1888 and 1890 more than fifty species of *Eucalyptus* were set out on the Santa Monica Forestry Station as this area was called, and after the Board was abolished in 1890 because of political difficulties, the work of experimen-

tation was carried on for a number of years by the College of Agriculture of the University of California. Between sixty and seventy species of *Eucalyptus* are growing there, forming the most extensive arboretum in the state. It is now in private ownership but the trees are be-



CORDWOOD CUT FROM A FIFTEEN-YEAR-OLD BLUE GUM GROVE

On good farm land, near Sanger in Fresno County, this had been growing at the rate of over five cords per acre per year. Three men averaged $7\frac{1}{2}$ cords of wood per day of wood cut with the gasoline saw outfit shown, and stacked. The wood sold for from \$16 to \$18 per cord at the grove. A producer, is *eucalyptus*, when it gets going.

ing protected and cared for as a setting for one of the exclusive clubs of Southern California.

Then for several years the United States Forest Service devoted some attention to experimenting with *eucalyptus* trees on foothill portions of the Angeles and Santa Barbara National Forests. Plantations of limited extent at Del Rosa, San Bernardino County and along the Santa Inez River, Santa Barbara County are still in existence as a result of this work. It soon became evident however, that climatic

conditions on practically all of the National Forests were entirely unsuited to eucalypts and the work was discontinued.

Both of the large railway systems in California have shown interest in the eucalypts as possible producers of ties and timbers. In the early '80's the Southern Pacific set out a number of plantations along its right of way in Alameda County and the details of this planting were published in one of the earliest reports of the State Board of Forestry. About 1910 the Santa Fe Railway planted an area near the coast in San Diego County to a variety of species, but these were badly injured by frost in 1912 and most of the trees were later removed to make way for agricultural crops when irrigation water was developed in the vicinity. Experiments meanwhile had demonstrated that eucalyptus ties are not very durable in the soil and could not be used satisfactorily with the prevailing type of spike; so the railroads ceased to experiment with them.

Then came the historic Eucalyptus boom. From 1900 to 1910 a great deal was written about the future of eucalyptus growing in California and many extravagant statements were made as to probable financial returns from investments in plantations. These estimates were usually based on maximum growth made by individual trees growing under optimum conditions without making allowance for losses in planting and from unfavorable soil, moisture and climatic conditions; or for slower growth of trees in crowded plantations. Several companies were organized during this period and people in many parts of the country were induced to invest in plantations on a share or acreage basis. Excessive stumpage values were predicted because of a mistaken idea of the amount of hardwood timber remaining in the Mississippi Valley. It was assumed by many people that the wood of eucalyptus trees grown on short rotation in California would be as good quality as that of virgin trees in Australia. Foresters of the United States Forest Service, State Board of Forestry and the University

of California urged caution in applying maximum figures to trees which were to grow under untried conditions, but these conservative forces did not take effect until a relatively large acreage of plantations had been set out—from 40,000 to 50,000 acres having

been planted to eucalyptus trees. Some of these plantations were doomed to failure from the start because of unfavorable climate, lack of moisture, wrong selection of species, or alkaline soil. Others have been well cared for and have made very successful growth though none have approached the over optimistic estimates of early enthusiasts either in rate of growth or value of the wood. In spite of this, the eucalyptus tree has come to California to stay; it will always be a prominent feature of the landscape and several of the species will make reasonably rapid growth where nothing else will survive. The writer has for several years been making observations on the growth of individual trees and plantations throughout the state as a



Putnam Studios

A YOUNG GROVE OF EUCALYPTUS IN SOUTHERN CALIFORNIA. THE TREES ARE FOUR YEARS OLD AND THE GROVE IS USED AS A WIND-BREAK

result of which it is evident that eucalyptus trees will be an important factor as producers of firewood and material for small turned articles such as insulator pins. Some species will be available for posts and piling, and eucalyptus charcoal is of excellent quality. Satisfactory plough beams, wagon frames and tongues, and hay rake teeth and frames have been made from large trees, but the difficulties of seasoning the lumber have been so great, that it seems improbable that trees less than 50 to 75 years old will ever be valuable for this purpose. The high grade eucalyptus lumber manufactured in Australia comes from trees uniformly over 100 years of age, some much older. Several of the most valuable of the Australian species are not growing in California and others have made very unsatisfactory growth under the changed conditions. Species which have made the best growth under California conditions are, from the Australian standpoint, of little commercial value.

The Blue Gum (*Eucalyptus globulus*) was undoubtedly the first of the eucalyptus to be introduced into

(Continued on page 688)

The Elder's Desert

A "Shaker"-Built Woodland in the Heart of Connecticut

By A. E. Moss

"LET'S look at a place in here. I should like to know what can be done in the way of planting," said my guide, as he turned from the wood road into a dense pine stand.

We were looking over a tract of woodland, owned and operated by a wood-using company in the central part of Connecticut. The tract was being cut over each year, trees of a certain size being removed and their places filled by natural reproduction from the side. A light place appeared in the distance, showing up like snow in the openings between the tree trunks. It was a hot July day, so I decided it could be only one thing—sand. It was my first sight of a small area—perhaps two acres—of desert within a stand of white and red pine.

Walking out into the middle of the place, our feet sunk into soft white sand, which filled our shoes, and

the glare from the sun had no need to take odds from anything in Arizona. As my eyes became accustomed to the intense light, I began to realize that these two barren acres were merely a remnant of what years ago had been a much larger desert of sand.

"Who planted this forest here?" I asked my guide. "Oh," he answered, "It was done by the 'Shakers' a long time ago. Chief credit belongs to Elder Omar Pease." This was my introduction to "The Elder's Desert," as it may as well be called.

Elder Omar Pease was one of the far-sighted leaders of the Enfield Society of "United Society of Believers in Christ's Second Appearing," commonly called "Shakers," who believed that agriculture included the growing of crops of trees on lands not used for field crops. During his leadership some 150 acres of forest were planted and, among other species, red and white pine. Though Elder Pease died in 1883, the results of his work are evident and, luckily, much of the area is now owned by a company which appreciates its value. The "desert" was apparently a small sand area which had been cleared and proved to be so poor that the sand started drifting. Elder Pease, therefore, attempted to reclaim this area by the use of forest trees. What species were used is not entirely evident, as the open spaces show that many failed. However, a careful study reveals his partial success. From the mid-



PINES PLANTED BY THE "SHAKERS" MANY YEARS AGO UNDER THE LEADERSHIP OF A FAR SIGHTED ELDER. THE "ELDER'S DESERT" IS NOW BEING CUT OVER EACH YEAR AND NATURAL REPRODUCTION IS TAKING THE PLACE OF THE TREES CUT



THE GREATEST EXAMPLE OF COURAGE WAS SHOWN BY THE RED PINE WHOSE BRANCHES GREW CLEAR TO THE GROUND

dle of the east side a stately row of red pines extends into the bare white sand. The limbs on the south side are even partly buried in sand, just as fine as that of an ocean beach. Here and there along the margin of the area, to the south of this row, are islands of pine needles and, close to the forest, nice young red pine in the partial shade of the older, nearly mature, white pines of the original forest. A very few clumps of bunch grass—low growing and acting as if only able to exist in the intense surface heat—are to be found within the sand area.

Pine needles have collected there in islands. One of the larger—a few feet square—had a slight greenish tinge. I went over to see what sort of a plant had the courage to live in such a place. It was a white pine seedling which was trying its best to get a foothold and help in the work of reclamation. About the margins of the area were gray birches in regular rows. There were breaks, to be sure, where either old age had removed individuals, or where they had failed Elder Pease at the beginning. These rows also ran east and west, bounded by sand on the south, and on the north the



THE BIRCHES MOTHER THE PINES
IN THEIR WORK OF RECLAMATION

forest had moved out to meet them.

Pine reproduction was almost complete in the shade of the birches and a forest floor was well on its way to restore the necessary humus cover.

White pines showed one or two scattered specimens within the sand area, sole survivors of rows, or else scattered individuals getting a start in bunches of grass and later furnishing their own shade cover and building up a leaf layer for their own use. The greatest example of courage and adaptability was shown by the red pine. The limbs grew clear to the ground, furnishing a wonderful protection against sun-glare and wind. On the north a layer of needles indicated the extent of the shade of the tree. Limbs were much more open and, best of all, dozens of little red pines extended out from their parent's shade into the reclaimed desert.

Looking back, I thought how great was the value of this record of Elder Pease's work on the little desert, and how it exemplified the time and trouble necessary to repair the damage of destruction of the original forest on this non-agricultural land.



Indian Summer

Across the leaf-strewn garden close
The windflower nods in the warm sun
A friendly greeting to the paling rose;
And frail petunias still smile—
Yet for a little while—
Half doubting summer's race is really run!

Aye, though the towering oaks are bare,
And hushed the veery's plaintive song;
Though a strange stillness in the tranquil air
Presages the sure end—
Which many signs portend—
Of all the season's beauty!—Ev'rywhere.

The autumn sunshine floods with gold
Brown path, heaped leaves and russet hedge;
And sifting through stripped branches, dots the mold
With topaz facets!—Damask days
Of mingled shine and haze!—
Midsummer, lingering at winter's edge!

—Clarence Mansfield Lindsay.



—Lyman E. Robbins

Treaty Oak, at Austin, Texas, was a trading post for frontiersmen and Indians in the early pioneer days. The tree is said to be 500 years old and its historical boughs cover one-fourth of an acre.



—Roscoe E. Green

Two young mountain lions captured near Myers Cove, Idaho, appear to enjoy the formality of getting acquainted with their young mistress.



—Arthur Moberg
Chief Stone Face. In the Kern River Canyon, Sequoia National Forest, California, this unique rock formation was once a place of worship for native Indians.

—William G. Hartmann
Eleven thousand feet above the sea in California, near the Sequoia National Park, is one of the few square lakes known to the world. It is fifty miles from any civilization.



ON AND OFF



—M. B. Haight

On Socia Island, one of the San Juan group off of the California coast, a lone pine still scorns the onslaught of wind and waves. Rooted in a weird rock it is a familiar landmark to sailors and fishermen.

F THE TRAIL



On a hillside near Marquette, Michigan, stands the "Wooden Man," one of nature's freaks. When the two trees that form the figure grew together, the limb grew downward, giving the appearance of a human figure wandering like a lost spirit.

—Cyril E. Lamb



Friendly enemies. In the solitudes of the great North country, man, bear and dog, explore a Canadian lake in a spirit of peaceful comradeship.



—Milford Zornes
Balancing rocks seems to be one of nature's hobbies. This one is on Lightning Creek, near Garden Valley, Idaho, and rests on a base of a little more than one foot square.

—Beattie M. Lill
Legend has it that Satan was interrupted while attempting to fence in a part of the Sierras in Madera county, California, and left the "Devil's Post Pile," to haunt exploring tourists.



Cora June Sheppard

Richards Oak, in Cecil County, Maryland, once sheltered General Lafayette as he reviewed his army. In recent years lightning rods have been erected to protect this great tree from severe thunder storms.



Wolves, Coyotes and Nature Fakers

By
WALTER J. PERRY

THE CUNNING COYOTE
Night prowler and savage music maker.

FROM time to time one comes upon nature stories in some of our most popular publications not infrequently signed by writers of wide reputation and even perhaps with a section of the alphabet tacked to their names. These stories, while often true to life and of the greatest interest to people—especially young people—who like to broaden their horizon in that greatest and most fascinating of studies, are all too frequently little less than criminal in their tendency to mislead. In fact, some of them, while carrying the ear-marks of scientific articles, and with the added prestige lent by their authors' names, are little more worthy of credence than Kipling's "Jungle Books."

A favorite subject of these highly imaginative "naturalists" seems to be wolves. Perhaps this is because peoples of all times have seemed to be particularly credulous when the subject was wolves, from the classic story of the foster mother of Rome's founder, on down to date.

Having had some little first-hand experience with wolves I have read these stories with the greatest interest—I was interested to know how the authors got that way!

For example, a few years ago I met, and entertained for the night at my house, a gentleman who claimed to be a naturalist and who I am assured has written much on varied subjects along that line. He is in fact considered an authority. He discoursed largely of wolves, and was imbued with the rather popular idea that they were possessed of an almost supernatural cunning. In fact I gathered that he gave them credit for almost

Sherlock Holmes-like powers of deduction, and he capped the climax by assuring me in dead earnest that quite a number of timber wolves had lately been discovered right in the heart of one of our larger cities. It seems that they were enabled by their cunning to make their living undetected, prowling at night and hiding during the day! He said he thought it a pity to exterminate "such splendid animals."

Some time since there appeared an article on the coyote, in one of our oldest and best periodicals. The author had undoubtedly drawn heavily upon hearsay information and had been led into some ridiculous errors. Any range man would at once see he had accumulated a vast stock of misinformation. Some examples were the statements: Coyotes never prowl at night. Coyotes never howl except in the neighborhood of their dens. Coyotes never go into the timber, being much too smart to allow their vision to be obstructed, etc., etc. Such stuff as that is all tommyrot. Most persons, if they happened to know anything at all of coyotes, would simply smile and forget the article. But many people, it may be, are reading of this very interesting animal for the first time and have no personal knowledge of him. These are the ones who record this misinformation in their minds as facts.

As to the first statement that coyotes never prowl at night: They do habitually prowl at night though not exclusively of nocturnal habits. To say they howl only about their dens is absolutely foolish on the face of it. After crediting Mrs. Coyote with a cunning far in

excess of anything she really possesses, the writer would apparently have us believe that she proudly sits up over her den and howls a notice to the wide world and all her enemies that she has an extra fine litter of pups there! Very likely indeed! I would lose all the great respect I have for her tribe if I could really believe she was so foolish. They *do not* howl in the immediate vicinity of their dens. On the other hand, they do howl at night or in late afternoon whenever they may be on their wide rambles. They howl alone their mating call or gathering call; they howl in packs when hunting at night, and this is the wildest, most utterly savage music—yes, music—a man may hear.

As to their never going into the timber: it is to laugh! The only place where they do not take advantage of the cover of timber is on the Staked Plains where none grows. There they take advantage of every buffalo wallow, or tuft of grass, or bunch of yucca to keep out of view. They can and do hide behind a remarkably small object, aided by their rather nondescript coloring which blends with almost anything. Anyone who has hunted in or been in our western forests in winter must have noted the criss-cross trails of coyotes in the snow. The only time they desert the woods is when the snow is too deep and too soft for them to travel. When the snow crusts in late winter they return again.

With all their shyness they are at times—especially at night—quite bold. I have had a dog coyote come within forty yards of my camp at night, and taking advantage of the darkness, spend a happy half-hour telling me his poor opinion of me and all my kind, even to the seventh generation! I have lain quietly in the dark and listened to him voice his undying hate, scorn and utter defiance of me, my dogs, my guns and all my inventions. I allowed him the privilege of free speech, and while next day, when our eyes were more equal, I might shoot him, it was not because I despised him, for getting right down close to the ground and looking

at the matter, he has it all over me in a dozen different ways. The only thing I can best him in is head work—and then it takes years to learn to *think* in coyote and do that!

In the New Mexico mountains coyotes mate about March 1 or even a little earlier, and the two to five or six pups are born about 60 days later, usually in a den excavated far into soft ground on some sunny point or hillside. The same den may be used year after year if undisturbed.

Coyotes, though not less fierce and bloodthirsty than their big cousins the gray wolves, are not nearly so bold. They frequently follow bands of the big killers and fatten on the leavings of slain cattle and horses. For while the big fellows insist upon absolutely fresh

meat, and generally get it, the coyote is not so choicé and will return again and again until the bones are picked clean.

One should really chalk up to coyotes the loss of many newborn calves now charged to "lobos"—that, by the way, is a proper name for wolves borrowed from the Spanish. Coyotes will kill, carry off and eat young lambs or



Courtesy Biological Survey

THE KILLER

Lightning swift in his attack upon his enemy, the wolf asks—and extends—no quarter.

kids, as well as all kinds of poultry. A possible exception may be ducks. I once knew a bunch of tame ducks about 15 in number killed in the course of a few days by some animal which did not either eat or carry them away. A very careful examination convinced me this was the work of a coyote. Coyotes will sometimes attack a band of sheep and slash their throats, apparently for the pure love of slaughter. I once saw 68 head of sheep that had been so killed in one night after having been scattered by a bear. Only a small part of one or two had been eaten. A lobo may do the same thing for the same reason.

The coyote feeds upon any animal he is able to kill, as well as upon grasshoppers and other insects when food is scarce. I have watched them on the Dakota prairies industriously catching grasshoppers, and have

known them to feed heavily upon a variety of small red plums along the creeks there. Also I am informed by an eye witness, and have myself seen unmistakable evidence, that they feed upon juniper berries. Truly the coyote race seems to be in no danger of extermination from famine! I have also been an interested spectator of their method of killing prairie dogs, upon which they depend largely for their fresh meat during the summer. I have seen a coyote creep up on his belly to the edge of a prairie-dog town, and when any of the population became suspicious and sat up to look around he would flatten out and blend with the ground and grass until feeding was resumed. When he judged the time had arrived the coyote would make a lightning charge with head close to ground not at the luckless dog but so directed as to cut him off from his hole. Some few dogs learn this trick. I once watched for some ten minutes a coyote stalking a cottontail rabbit near some creviced rock where with a leap or two the rabbit could be safe in a hole. He obviously realized this and was very patiently waiting for bunny to get a sufficient distance from his hole and make a run on him worth while. I shot this fellow—he was poaching on my preserve.

Coyotes—lobos, too—kill sheep and such small animals by an attack at the throat, by a slashing cut, and not by seizing as a dog might. He seldom or never seizes. Fighting in the open his tactics consist in making a lightning swift leap past the enemy or prey and a side snap as he goes. If his snap is successful, the momentum of his body causes his long and slightly hooked teeth to tear out and thereby inflict a terrible ripping wound instead of a mere puncture. Cornered, he does not merely bite his enemy, but with the quickness of a rattle-snake his head is extended and brought back in the same motion, and the weight of his head and neck is thrown into a whip-cracker snap. The result is a cut rather than a mere bite. Very few ordinary dogs can kill a coyote at close quarters, though heavy and swift hounds make kills by overtaking and overthrowing him while he is still in full flight.

The lobo kills larger game than the coyote and usually hunts in couples or in packs. If there is more than one wolf one keeps at the animal's head and the other will make a flying leap and slash at the lower part of the ham, severing the ham string. The stricken animal sinks down helpless and is at their mercy—and a wolf knows none. But as the wolf or coyote extends no quarter neither does he ask any. I feel quite sure that no amount of torture would serve to bring a whimper from a captive coyote, and that with his dying effort he would endeavor to kill his captor.

Once in order to supplement my observations on coyotes, either at large or trapped, I dug out a den and raised two of the young to maturity from small pups. They were kept in semi-captivity in a good sized poultry wire pen and were never chained up. While they were extremely interesting they could hardly be called pets, and although I have been quite successful in raising and gentling various naturally wild animals, I was never

able to gain their confidence and bring them to a stage of gentleness where they would willingly allow me to place a hand on them, though when caught they would not bite me, and I habitually fed them raw meat from my hands without danger. Handling these I learned that a serious bite may be avoided by closely observing the eyes and mouth. Once a coyote strikes no man is quick enough to avoid his fangs, but before he strikes the pupils of his eyes invariably dilate, and another and equally sure sign is an opening of the jaws and retraction of the tongue.

As a result of my experiments to test the keenness of their senses and their intelligence my conclusion was that their senses of sight, hearing, smell and touch were extremely acute. It was interesting to note that when soundly sleeping the slightest unfamiliar noise would cause them to prick up their ears, or an odor as of food would cause their nostrils to work and they would presently awake. Noises to which they were accustomed, even the shriek of a locomotive, would fail to rouse them.

Rather than credit the coyote with any particular intelligence, above that of the dog, such as many writers have ascribed to them, I would say that the keynote of their whole nature and the explanation of their escape from extermination—with the whole world against them—is an abnormally developed bump of caution. They fear anything they do not entirely understand, and were it not for a certain sense of curiosity they exhibit, especially when their sense of smell is appealed to, it would be almost impossible to trap them.

Wolves are not easily trapped, though any skillful trapper can place a trap so no man or animal could detect it by the sense of sight, and after the man scent has left the locality it only remains to induce the wolf to visit the spot and tread on the trap. There are various scents used to lure wolves. Some of food, others containing the sex lure, and still others which are merely a "stink bait" designed to work upon their curiosity. Any of these may be deadly under favorable circumstances.

Approaching the lure the wolf will circle and sniff from all sides, gradually drawing nearer but all his senses on the alert. The slightest scent or other sign of the trapper, or an unnatural softness of the ground under a foot, and he is off not to return. So the experienced trapper makes his set in perfectly open ground where it is likely to be sprung during this reconnoitering.

On the whole, wolves are absolute savages, they are wild, wild a thousand generations before they are born, and this wildness, which is excess caution, has enabled them to hold their own or at least escape total extinction, but they do not reason—not quite—only man does that.

And, withal, I am forced to admire the coyote because "stacked up against hell and damnation he has managed to stay in the game." If I kill him it is because he is my enemy, and the enemy of civilization in general, and makes no claims to the contrary, and not because I despise him. And by the same token, if I kill him it will be in open warfare—cleanly, with rifle or pistol.



EDITORIAL

The Ax or The Tax?

TRIBUTE is due those who under conditions of forest taxation now prevailing in many of our states are endeavoring to perpetuate their forests by selective cutting and other conservative methods of management. They are working against handicaps that are both discouraging and menacing. The following letter from a member of the Association in New Hampshire is directly to the point:

"The discouragingly low prices of our local lumber amount to a real hardship and I almost doubt if it's worth while to keep up the fight longer. The demand and price for our local pine is very poor. I am beginning to think that I am wasting my money in trying to do any more than strip what land I have. Am scarcely able to raise enough money to pay the heavy taxes. People with no timber demand and get greater amounts spent on public uses than we can afford and it will ruin the timber prospect. Many are compelled to cut and force on the market more than can be absorbed at profitable prices."

Will the American public never awaken to the fact that we cannot have real forest conservation so long as it harbors an invisible woods butcher in the form of confiscatory forest tax systems? In too many of our states the situation is a travesty upon political statesmanship and a monumental paradox of conservation. State legislatures vote money to support state forest departments charged with the duty of aiding and encouraging citizens to practice forestry, and then permit local assessors to penalize them with a tax valuation that may render their efforts a dubious undertaking at best. Sooner or later they are forced to choose between paying an annual tax that is becoming confiscatory or applying the ax to their growing forests to free themselves of an asset that is being taxed into a liability.

In New Hampshire, where the writer of the above letter is struggling to keep his financial head above the tree-tops, conditions appear especially aggravating, in spite of the fact that the State holds out certain tax

rebates if some rather difficult conditions are complied with in growing timber. Mr. J. W. Toumey, Director of the Yale Demonstration Forest, at Keene, New Hampshire, recently said: "New Hampshire is the most backward state in New England in establishing a body of forest laws under which private forestry can be a profitable undertaking. We in this State are taxing our best stands of timber out of existence and progressively increasing the area of worthless timber which pays little tax. Hundreds of pine lots are cut prematurely in order to escape an excessive and unreasonable tax."

One would hardly expect this in a section of the country noted for Yankee acumen, and particularly in a state where taxing the forests out of existence is tantamount to taxing out its two principal sources of income—lumbering and summer tourists. In varying degrees this condition of affairs is common throughout most of the other states. It places private forestry in a hazardous and unstable position and is defeating the states' efforts to stimulate forest protection and reforestation among its citizens.

The situation is not, however, without its encouraging side. A number of states have recognized that fair taxation of timber is a basic corollary of private forestry and they have enacted special laws designed to relieve young growing timber from the burden of a heavy annual tax. Conspicuous among these states are Louisiana, Massachusetts, Michigan, Ohio, Pennsylvania, California and Wisconsin. It is not claimed that these laws represent the final word in forest taxation, but they do give the person undertaking private forestry some definite assurance that the results of his labor will not be usurped by a tax-hungry community. Progress along the same lines in other states is one of the great urgent needs of forestry today. It becomes more apparent every year that if the American public really wants forests, it will have to take off its coat and remove such public hazards as forest fire and confiscatory forest taxation, which have brought private forestry to the brink of uncertainty.

Forestry in Summer Camps

AN exceedingly interesting experience in forestry education was related by William M. Harlow of the New York State College of Forestry at the recent meeting of the Society for the Protection of New Hampshire Forests on Parker Mountain, New Hampshire. Mr. Harlow had been engaged by the Society to visit boys' and girls' camps throughout the State and during July and August he had spent several days at each of thirty different camps, giving the children instructions in forestry and developing forestry activities as a part of the regular camp programs.

In conducting his work, Mr. Harlow's motto was "Learning by Doing." He engaged the interest of the boys and girls by having them take an active part in forestry activities. In a number of the camps careful surveys were made and volunteers drafted for thinning, weeding, pruning and planting the woodlands. The effort was to have the boys and girls understand each step in the operation and to see and to feel a personal pride in the transformation effected by proper treatment of the forests. In addition to this activity, games were developed to teach the children observation when in the forest—a trait which most city boys and girls lack.

Evenings were devoted to talks on forestry designed to give the children a clear conception of the need of forest fire protection, forest taxation and other measures which will aid forestry. Different suggestions were left with the directors and nature and woodcraft councilors of the camps for developing regular forestry programs. The interest which the work aroused in the camps visited emphasized both the need and opportunity for this type of forestry education.

Every summer thousands of boys and girls leave their homes to spend July and August in summer camps. These camps have become a powerful influence in educative outdoor life and it would seem that every summer camp should recognize that forestry is a basic factor in perpetuating not only the summer camp itself, but the outdoor life and understanding which it seeks to promote. Unfortunately, few of the camps have given much attention to forestry and the initiative of the Society for Protection of New Hampshire Forests in pioneering the way into this large field of opportunity is to be highly commended. It is to be hoped that the work may eventually be extended to the hundreds of camps throughout New England.

Misleading the Public

A NEWS reel company, engaged in the commercial distribution of photographs designed to catch the eyes of editors, recently sent us the photograph of a gentleman who, according to the caption attached, developed synthetic lumber from the fibre of sugar cane. This product has been on the market for several years and has enjoyed a wide use as a fibre and insulating board. The invention was new several years ago, and our interest was aroused to read further into the tabloid caption for news of latest development. We were rewarded with the information "that this synthetic lumber is expected to save much timber now in course of demolition to meet the demand for lumber," and that "every thousand feet of this lumber manufactured saves a tree and serves to conserve American forests."

We suppose that many thousands of these photographs with this illuminating caption have been sent to editors all over the country with the expectation that their interest in seeing the forests of America conserved will promptly impel them to sign a check for three dollars, and then with a free conscience to blazon this astounding declaration to a hundred and twenty million people. Whether the "newsreeler" is the victim of a clever publicity man hired to increase the sales of the product in question, we do not pretend to say. We prefer to credit him with believing his own caption and to forgive his ignorance of present day conditions in the lumber industry, even though it is ignorance used in a way harmful to the working out of the forestry problem.

To call the product in question "synthetic lumber" is somewhat of a misnomer because it is not a structural material in the same sense as wood. And to imply

that the individual who has need of lumber can promote forest conservation and save a tree for every thousand feet of so-called "synthetic lumber" used is poppycock. Certainly it is not in accordance with the facts as foresters recognize them today.

As a matter of fact forestry at this particular stage of economic conflict will be helped more by people using more lumber rather than less lumber. The reason is that there is an overproduction of lumber in the United States and cut-throat competition in and out of the industry has forced lumber prices down to low levels. This condition has prevailed for a number of years and will probably continue, unless some method of regulating the lumber cut can be evolved. Overproduction in the lumber industry is invariably characterized by a wastage of timber in the woods and at the mills, because a glutted market and low lumber prices do not permit close utilization of trees cut. However much we may condemn this fact, it is nevertheless an economic one which holds as true in the lumber industry as in the oil industry. It must be faced constructively and not destructively.

Unless forest industries are profitable pursuits, there can be no great incentive to private forestry. To urge the public to use less lumber at a time like the present is to champion forest waste and disruption of the lumber industry. It misleads the public and tends to create chaotic conditions which discourage forest management and reforestation through individual initiative. Neither forestry nor conservation will be furthered by publicity or propaganda which tends to make forest industries unprofitable and hazardous.

Eccentricities of Diet

Proving the Truth of the Saying "There's No Accounting for Taste"

By WILLIAM THOMPSON

IF a proprietor of a Parisian restaurant desired to give his clients an idea of the extraordinary dishes of primitive and eccentric people, he could serve them soup made of swallows' nests for which the Chinese have an affection, then a stew made with the worms of the palm tree, the great larva of the coleoptera, which is found in the heart of the date palm and upon which the negroes of the Antilles feast. He could then offer a fry of migrating crickets so much appreciated by the Arabs, or a plate of caterpillars of Colombia which the Indians relish with great zest and which they dig from the nests excavated by the insects on the banks of the rivers. After a salad of sea cucumbers gathered on the coast of Africa, he may offer his guests cakes made of a certain argilous clay which are considered by the Annamites a very great delicacy. Without doubt lovers of good things will make a wry face at the composition of such a bizarre menu which deviates so widely from the gastronomic

rules laid down not long ago by the celebrated Brillat-Savarin.

Yet it is not necessary to travel to the countries of the savage to prove the eccentricities of taste. A peasant of Roissy in France ate muskrats raw, and Lalande, the illustrious French astronomer of the 18th century, relished caterpillars and spiders. This noted savant took supper every Saturday at the home of the



A DELICACY OF ANCIENT ROME

These are the great stag-beetles (*Lucanus*) found in abundance in the oak forests of France, the plump larva of which are reported to have particularly appealed to the palate of the noble Romans of old.



JOSEPH JEROME LALANDE

An illustrious French astronomer of the 18th century whose epicurian taste ran to the luscious caterpillar and spider.

naturalist, Quatremere Disjonval, and during his meal would consume these insects with the greatest delight.

Aristotle has informed us that the Greeks ate grasshoppers. They sought the fleshy female, discarding the male, preferring the young to the adult, and above all the larva as it casts its shell. These were gathered in summer as soon as they came from the ground. J. H. Fabre, the illustrious entomologist of Orange, France, wished to verify if the "divine food" vaunted by the philosopher of Stagire merited its renown. One morning in July when the sun, already scorching, induced the larva of the grasshoppers from their underground habitations, he departed with his family to

hunt them. There were in all five persons. At the end of two hours of careful search the hunters secured only four larva which they plunged into a glass of water. As soon as they entered their house they threw them into a frying pan with a portion of oil, a pinch of salt, and a sliced onion. At dinner the guests,

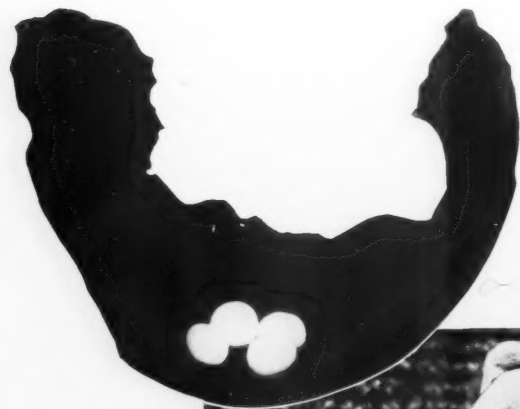
who, dying of hunger in Oceania in the course of an exploration, ate them grilled with rice. Edmundo de Amici found them very tasteful to his palate when they were boiled and seasoned with salt, pepper, lemon or vinegar.

In the forests of France where oaks predominate we can find in great abundance the *Lucanes* stag-beetles whose plump larva constituted, so say historians, a feast for the Romans.

Carl Lumholtz recounted in his turn that he feasted in company with Australian blacks on larva of many species of coleoptera. Each has its special flavor but the best are the shiny white ones, the size of a finger, which live in the trunks of acacias. The Blacks cook them on embers and during this rapid cooking turn them on spits. As they are very fat their flesh shrivels up in the fire. He has said the flavor resembles that of an egg and is preferable to

an omelet of our country. Rather than verify the assertion by personal experience we prefer to accept his word. Thousands and -leggers are also popular with the Queensland Blacks.

The plump larva of the

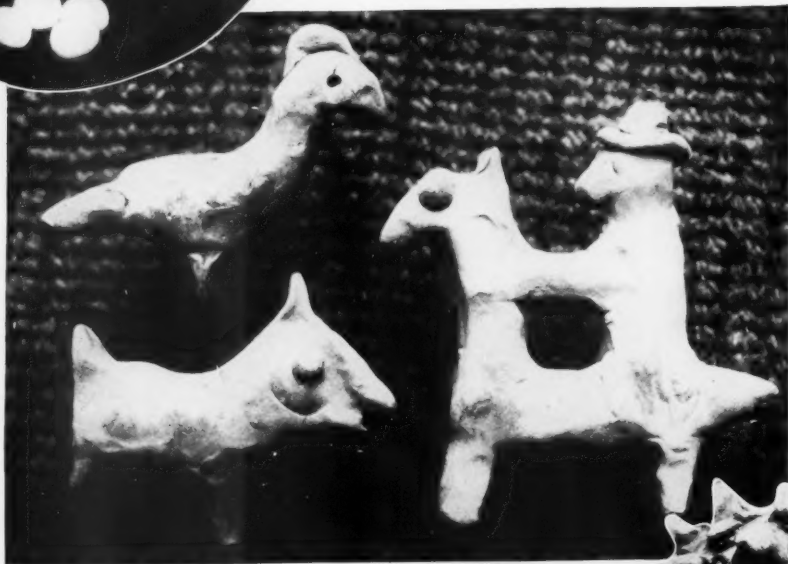


people of good appetite and with stomachs without prejudice, declared them equivalent to fried leather, lacking in juice. In spite of a slight flavor of shrimp which the dish glorified by Aristotle possessed, the French naturalist did not recommend anyone to chew this tough morsel.

Termites or white ants, which are en-

countered in numerous colonies in central Africa, are particularly prized by the negroes who hunt them at the end of the rainy season when they leave their subterranean nests. The Brazilian aboriginal eats, also, the great "occodome" ant which they call *formigas tanajuras*. At Sao-Paulo certain merchants, who make a specialty of the preparation of these ants, dress them up like dolls and display them at the entrances of their shops to attract clients.

The pilgrim crickets, whose invasions sometimes cause great ravages in the South of France and in Algeria, supply a food with a most agreeable flavor. These insects or acridians will recall to mind Kunckel



THREE COURSES OF A BIZARRE MENU

Soup made of Asiatic swallows' nests (the upper insert) loved by the Chinese; delectable cakes made of clay and considered by the Annamites a very great delicacy, and a salad of sea cucumbers (lower insert), gathered along the African coast. What could be more tempting?

curculio palmarum is found in the terminal bud of many date palms and is prized by the natives of the Antilles, and of Annam and Tonkin. The Annamites after having gathered the "condoungs" as they call them, fatten





A UNIQUE SKY-SCRAPER

This tower was built by the termite or white ant of Abyssinia, an insect greatly prized by the negroes as an article of diet.

them for a month before eating.

To enumerate less repugnant whimsical foods: cockchafers, which suited the taste of Testelin admirably, as he proclaimed publicly before the French Senate some forty years ago during a discussion of a proposed law on the destruction of certain objectionable insects; sea cucumbers, which have numerous lovers on African shores and which possess, it appears, the agreeable taste of the shrimp; rats, grilled with their skins, and toads which the Batekes of the French Congo eat after having exposed them alive to a very hot fire, as Monsieur Coupin teaches us in his excellent work on "*Bizarries des Races Humaines*" (Whims of the Human Race) 1905; nests which different kinds of *salangane* swallows

build on the islands of Dutch East Indies and on which much has been written; the comestible nests, dear to the Chinese, owing their particular flavor to a species of red seaweed of the *floridees* group which the birds mix with their saliva for constructing their homes.

In Tokio wild bees cooked in a special syrup over a slow fire are considered a great treat. The marmalade thus obtained possesses a very delicate odor, is extremely nutritive, and its mellowness bears comparison with our finest jelly. Occidental palates can soon judge for themselves, as many Japanese exporters have the intention of launching this confection of bees on the European markets. We will perhaps see it served on the table of some epicure, beside the clay cakes which he will have brought back from a voyage in the Far East.

In different parts of the world one meets entire tribes of earth eaters. The yellow races show themselves especially attracted to this singular custom, although it has been noted in tribes belonging to other ethnic groups and in almost all latitudes. In Guiana and in Siam, in Venezuela and in Siberia, in Cameroun and in New Caledonia, in Indo-China, and with the whites established in South America. Even in Spain, the heroines of the day consume without any distaste the gritty sand from which *alcarazas* are made, in order to conserve the freshness of their complexions. In Java the natives reduce the clay to a paste with water and bake it into clumsy figures like our old-fashioned ginger-bread cookies.

Perhaps it was after considering these gustatory vagaries that the Roman philosopher wrote "concerning the tastes, there's no explanation."



PILGRIM CRICKETS.—AN ARABIAN PIECE DE RESISTANCE

Natives are shoveling these migrating insects from a snare net set to stop their invasion. Properly prepared, boiled and seasoned, or grilled with rice they are counted as food with a most agreeable flavor.

The Fern Gatherers

By ELBA A. HENRY

THE feel of a clear crisp morning in early October! The forest leaves turned from summer's green into a myriad colors painted by the frost-brush of autumn! The cameo-like clearness of the mountains when the sun first peeps up over the rim of the world!

Then, with the clean tang of the woods-smells, the odor of dying bracken and the sweet of crisping maple leaves, you will have some idea of the conditions under which the Vermont fern pickers work in an industry little known outside the confines of the State. From early September till snow flies, these men are in the woods gathering the precious fern fronds which are in demand by city florists, who find them superior to the hothouse products, and, incidentally, cheaper. A day spent in camp will give an interesting view of the work and a glance at the lives these men lead in the forest—perhaps many miles from the nearest farmhouse or village. "Five-thirty, all out!" The call comes before you hardly had time to warm the bunk. Or, at least, that's the way it seems to you, tired after the long ride on the fern-gathering truck and from the tramp into the abandoned logging camp. Just a trace of light in the eastern sky. A chilling stillness that is broken only by bird-cries made by some late-staying songster. And, aside from that, a tang of frost that has formed a skimming of ice on the bucket of water outside the camp door. "Come and get it!" calls Joe, the cook, from the door of his shanty, and the coaxing odor of baked beans, bacon, fried potatoes and "flapjacks" brook no second invitation. Doing violence to every modern tenet of health and diet, you eat until modesty forbids really satisfying

the craving you feel. Washing down the savory food with several cups of strong coffee, you are fortified for the day's work.

Sun-up, with the light of the rising sun just tinging the tops of the western mountains, the lower slopes brought faintly into relief as darkness recedes. Then, suddenly it is really day and you start the long climb up the mountain slope. Your first day of fern picking.

Naturally, you feel that you must be equipped like the rest of the party and are provided with a square three-bushel basket, a sharp knife and several balls of stout twine. Possibly you have your misgivings as you note the stained and calloused

hands of your companions, but you say nothing and, like other amateurs, wait "to be shown."

It's not an easy climb. The stones are covered with damp, slippery moss, the leaves coated with frost and the unwonted feel of heavy tramping boots tends to create the impression that you are slipping back two steps for every one ahead. But you finally arrive, breathless maybe, but full of expectation for the new work. Here

are great masses of vivid green fronds standing erect and untouched by other pickers. It's a find, and your companions are eager to set to work! They see a good day's pay ahead. These are the "fancys," as they are known to the trade, but the botanist knows them as *aspidium spinulosum*, or the "spinulose wood-fern." Nomenclature aside, they are the alpha and omega of the fern-picker and the source of his greatest profit. Fern picking looks easy. To the uninitiated it seems like play of a

particularly pleasant sort. But the back-break and stiff muscles of the following morning make him change his mind. Those engaged in the work neither stand, sit



COMMON IN NEARLY ALL HARD-WOOD FORESTS, *ASPIDIUM MARGINALE* IS ONE OF THE MOST VALUABLE FERNS. IT FORMS THE BULK OF THE VERMONT SHIPMENTS



A FERN BED FIT FOR A FAIRY QUEEN—THIS IS ONE OF THE MOST DELICATE AND BEAUTIFUL FERNS KNOWN TO THE BOTANIST. IT IS INDEED A FIND FOR THE FERN PICKER IN VIRGIN TERRITORY, AND WILL YIELD HIM A RICH HARVEST

nor crouch, but adopt a combination of all three postures. Then it's work at top speed.

The graceful fronds are not gathered one at a time and carefully arranged. The picker makes one sweep with his keen-edged knife and brings away the whole top of the plant. A hasty glance and he knows the number of leaves, a dextrous twist of the wrist and they are arranged with severed ends evenly placed. The fronds are tied, twenty-five in a bunch, all leaves facing up. As fast as the ferns are collected they are placed in piles and are later loaded into huge baskets, the tops covered with leaves to keep the valuable fronds from wilting. It's a long task to fill the great pannier, which may hold as many as 16,000 fronds.

Only a few minutes are taken for the mid-day meal. Daylight is precious and must not be wasted. There's plenty of time for eating after the sun has set, when the ferns are out of the woods and it's no longer possible to work in the gathering darkness.

The picturesque end of the business is likely to be lost for you when you try to load your basket on your back and start for the camp. Light at first, it becomes a veritable "old man of the sea," and you feel like a particularly heavily laden Sinbad before you have gone a mile. At the end of the trip you would change places with Atlas and feel that he was getting the worst end of a poor bargain.

Then the gathering in camp for supper. Bountiful meals, suitable for wood-choppers, quickly disappear

and you unashamedly eat your fill with the rest of the gang. Despite aching shoulders, creaky back, sore hips and lamed legs, you find a thrill in the work and a zest in life, when, after supper, you gather in the circle around the stove and listen to stories. Soon you add your bit to the rest of the talk and all too soon it is bedtime, for it's "early to bed and early to rise" with the pickers.

The forest end of the work is the most appealing and has the most of romance. The sternly practical part of the venture has little of the esthetic. For the beauty of the outdoors is lost as soon as the gathering truck leaves the woodland road and travels the main highway toward the central plant, where the ferns are packed and stored against the time of shipment.

In Vermont, Danby is the center of the industry. This is a little valley village on Otter Creek, and not many miles southwest of Plymouth, the birthplace of President Coolidge. Here is the cold-storage plant, where millions of fronds are stored each fall, waiting the call of the city market. They are sent out from here to find their place in the decoration of the ball-room and banquet hall, to form the background for the costly blooms of florists.

The storage plant is strictly modern. There's nothing of romance about it, unless it is the romance of modernism and of mechanical ingenuity. A long, low stucco building, with no windows and few doors. The interior is brilliantly lighted and long rows of frost-covered

pipes line the walls and ceiling. Piled high on either side of narrow alleys the cases of ferns stand, ready for shipment.

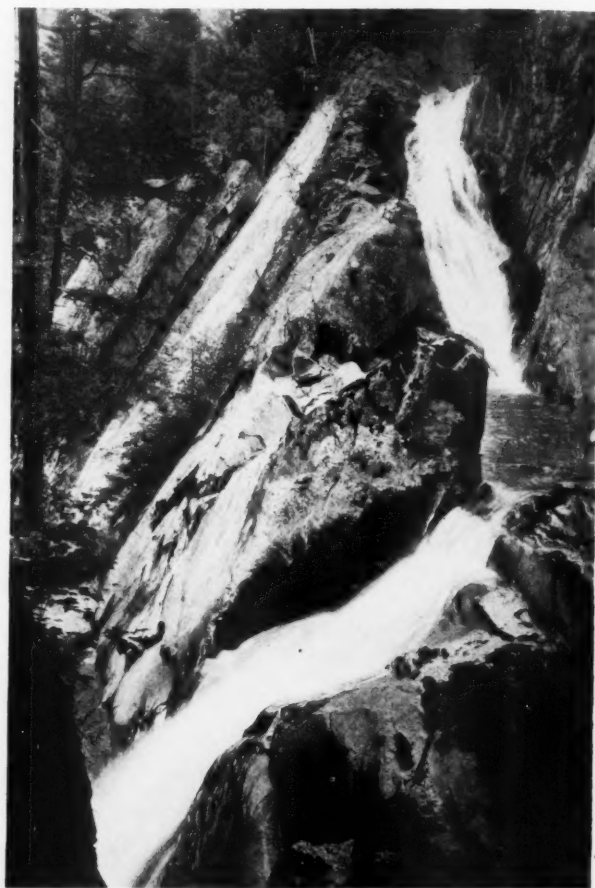
The temperature of the room is more or less of a secret. There's a point that's just right, and the owners of the plant know what it is, but they are not broadcasting their information to competitors. At any rate, it's a little below freezing, but not enough to injure the contents of the boxes.

When the ferns are trucked out of the woods they are again taken out of the crates, sorted, counted and packed in paper-lined boxes, and then stored. Poorly tied bunches are straightened, imperfect specimens thrown out and the varieties carefully sorted before they go into the shipping crates.

Only three varieties of Vermont ferns find commercial use. One of these, the spinulose wood fern, has been mentioned. This constitutes by far the greatest bulk of shipments from the Green Mountains. Second in importance is the "coarse fancy," or the *aspidium marginale*, of the botanist. Ranking third in importance



THE PICKER RESTS A MOMENT FROM HIS LABORS. HERE IN VERMONT, IN THE VIRGIN TIMBER, MORE THAN 2000 FEET ABOVE SEA LEVEL, ARE LITERALLY MILLIONS OF FERNS WAITING TO FILL THE STORE HOUSES OF COMMERCE



HIGH UP IN THE GREEN MOUNTAINS IS LLANA FALLS, AND IN THE FORESTS SURROUNDING THE CATARACT ARE FOUND THOUSANDS OF THE VALUABLE FERNS SOUGHT FOR THE TRADE

and cordially hated by the picker is the Christmas fern, or, as he knows it, the "dagger." This is a shiny green plant, somewhat like the "Boston" fern of the housewife. It rejoices in the man-sized name of *polystichum acroschoides*.

Few people realize the magnitude of the industry in Vermont. The Danby firm alone leases over 200,000 acres of land on which it has the exclusive "ferning" rights. Some of this territory is more than eighty miles from the storage plant and is nearly a day's journey with the heavy trucks. And this is only one of many companies and individuals operating in the State.

Some operators do not maintain their own picking gangs, but hire men, women and children to do the work, paying them at the usual rate and calling frequently for their ferns. This work, done after the press of farm work is over in the autumn, is an important source of revenue to the people living near the mountains. They are not making fortunes and riding in expensive cars, as some would have us think, but they are able to enjoy more of the comforts of life since the advent of this novel business.



THE BUCKHORN RANGER STATION DRESSED FOR WINTER

Tango

By R. R. WILLEY, *Forest Ranger*

DID I ever tell you about Tango taking a bath? First let me tell you about Tango. You usually think of Tango as a kind of dance, but this Tango was a burro; a great big long-eared shaggy burro. His hair got so long in winter and the summers were so short that he never did have a chance to shed his winter coat before it was time to start a new one. His disposition was a cross between a spring morning and a stick of dynamite. He had a habit of coming up to me, rubbing his head against me as much as to say, "You are sure the persimmons, me for you;" then he would take a wallop at me with his heels, so I never did know which end to believe. But for all his using me for a foot ball once in a while, he was one of the best pals a ranger ever had. His favorite color was gray. I rode a gray mare; she also had a Dr. Jekyll and Mr. Hyde disposition—mostly Mr. Hyde. I called her Nellie. Tango got so he would follow Nellie everywhere. This made him as handy as a pocket in a shirt. I could put a pack on him, get on Nellie and Tango would follow. It was like Mary and her little lamb; everywhere that Nellie went Tango was sure to go. He would stick to that gray mare like a sick kitten to a hot brick.



LITTLE TANGO PLOWED ALONG, THOUGH ALL BUT BURIED IN HEAVY SNOW

The snow had piled up till it was about ten feet deep in the mountains last winter, and was late going off. Along in June, J. Pluvius (I guess he's the bird) went on a rampage, and a heavy continued rain on the late snows caused the mountain streams to swell all out of proportion. It looked as if the Mississippi had moved west. I was low on grub so when the mist had cleared

I saddled Nellie, put the pack saddle on Tango and started after grub and to look over the damage done by the flood. Damage is a good word; there was nothing left but a sea of water, going down the canyon like a mail train. The road and bridges were no more. I had to pick my way over hill and down dale so by night I was only fourteen miles actual distance from where I started after traveling thirty-nine miles. I stopped at a ranch house for the night, and put Nellie and Tango in a small pasture that was bounded on three sides by a fence, and on the other side by the mountain torrent. It seemed safe enough to leave them there because it looked impossible for man or horse to stem that torrent's force and reach the other side. But next morning when I went to catch the animals and start off Mr. Hyde was on the job. When Nellie saw me coming she took the plunge in that

angry flood. I expected to see her go down but she made it with apparent ease. Tango saw her go across, let out a snort and plunged after her. His heart was all right but his head work was poor. He tried to go straight across instead of heading up stream and breaking the force of the water as Nellie had done. When the current hit him broad-side it bowled him over like a tenpin. He turned three complete somersaults and was submerged as many different times. Each time he came up with the look of a dying calf, coughing and spouting water like a fountain. But he was a game rooster and when he saw us standing on the bank he made a heroic effort to get back to us. When I saw that won't-you-please-try-and-save-me expression on his face, I felt something on my cheek and reached up and brushed a tear away. I don't know for certain why the Lord put long ears on a burro, but I found out they do make good handles. Hank Martin, who was with me, grabbed Tango by the ears, and I got

a nose-hold on him and we hauled him in tow. It was like a tug of war. That foaming torrent was trying to claim a victim and Hank and I were determined not to let it. Hank's nephew came to the rescue with a lariat rope, and we put it around Tango's neck and snaked him to the bank, baled about three or four gallons of water out of him and put a blanket over him to keep him warm, not entirely sure but that the stream had won the battle. But by the time we had erected a temporary bridge, and caught Nellie and got her back where she belonged, Tango was practically as good as new again, and ready to travel. So I saddled up and got under way.

You know, I have learned to think a lot of that long-eared offspring of Satan. And when on the long mountain trail I look around and see him following along like an Airedale dog, those hairy, flopping ears, pointing sardonically at my back every five seconds, don't make me a bit mad. I am thankful to think we cheated that angry flood out of one victim.

A Traveler to Arcady

By CLARENCE MANSFIELD LINDSAY



"AND 'NEATH AN OAK TREE SAT ME DOWN"

*In merry mood I danced adown
The road which leads to Arcady!
From autumn woods, all golden brown,
Came sounds of elfin minstrelsy;
And with the hidden pipers I
Kept step as I tripped gaily by!*

*Borne to me on the fitful breeze
Sweeping the pastures, heather-blue,
I caught the tang of salty seas,
Far distant, where the sunbeams woo
The silver sands; and all day long
The foaming billows break in song!*

*Above me, in the damask sky,
Seen faintly through the smoky haze,
The great white cloud-ships floated by,
Whose trailing rudders seemed to graze
The trembling top of each tall tree
Upon the road to Arcady!*

*Anon I paused within a glade,
And 'neath an oak-tree sat me down;—
While of its sun-splashed leaves I made
A gay and multi-colored crown.
Then, from a swaying willow-shoot,
I fashioned me a rustic flute!*

*Thus furnished, forth once more I fared,
Eager my pipe's blithe note to blend
With the wild bird's; nor longer cared
What time I reached my journey's end;
For joy enough it was to be
Afoot, and bound for Arcady!*



Hope They Will

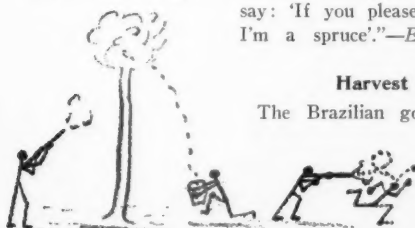
The old codger out in section 37 cogitates a little, to wit: Somehow things ain't just consistent all the way around. With everybody tryin' to get the farmer out of the woods, then they hold American Forest Week to get him to plant more trees.

Seriously, though, our wood supply is decreasing mighty fast. Probably our Congressmen can put their heads together and take care of the situation.—*Fertilizer Review*.

S'cuse Please

Nature Lover (gazing at a gigantic tree)—"Oh, wonderful, mammoth oak, if you could speak what would you tell me?"

Gardener (nearby)—"S'cuse me, mem, but 'e would probably say: 'If you please, I'm not an oak, I'm a spruce'."—*Exchange*.



Harvest or War

The Brazilian government has ordered a large number of rifles from Denmark. This may be only for the

purpose of shooting down the nuts.—*Palm Beach Times*.

Most Popular Tree

Tree names have puzzled everybody, but few have found so happy a solution of the difficulty as the Savannah Girl Scout who listed the "lollipop" pine among the Southern trees—anyway she wasn't so far from its real name which is "loblolly."

Community Project

There are 28 dogs and 14 human beings in Possum Trot, Indiana. A census of fleas is being taken.—*Collier's Weekly*.

At the Source

Sweet Young Thing—"You say they make paper from those trees? That's a funny looking tree over there."

Lumberman—"Yes, it'll be a comic supplement some day."—*The Review*.

Blister Rust Agent in the Role of Villain

Wm. Clave, one of the blister-rust control agents in Massachusetts, philosophizes as follows after uprooting a lot of tame ribes (gooseberry and currant bushes), in the course of his work:

"If ever there is a debate between blister rust control agents as to whether or not talks on blister rust should be given, I have a good point for the negative. Last December I gave a talk at a meeting of the Templeton Woman's Club, stressing the importance of the removal of cultivated Ribes in that town.

"One evening, sometime later, I received a call from their committee on the annual play and was asked to take the part of

the villain. Now, I don't know whether to take this as a compliment or an insult, but they seemed a little bit too sure that this was just the part for me. At the first rehearsal it seemed to me that they put a little too much feeling into the names they were obliged to call me, and I'm beginning to think that this is simply their method of getting even for the loss of their cultivated Ribes. Well, it's all in the day's work.—*Blister Rust News*.

Out Door Good Manners

By order of the selectmen, cows grazing by the roadside or riding bicycles on the sidewalks is hereby forbidden.—*Norway (Me.) Advertiser*.

'Nuther Alligator Story

"There had been, you see, a colored revival, and the colored revivalist was about to baptize a batch of converts in one of those dark, silent, suspicious-looking streams that you find in our Everglades.

"Come," the revivalist said, as he stepped into the black water. "Come, follow me, breddern and sistern."

"But just then a couple of alligators raised their heads from the mud and opened their terrible mouths in a vast yawn. This caused the converts to step back with low cries of alarm.

"The revivalist rebuked them. 'Breddern and sistern,' he said, 'can't you trust de Lord? He took keer o' Jonah, didn't he?'

"Yaas, he did, pawson," said a convert soberly, 'but a whale's different. A whale's got memory. But if one o' dem 'gators was ter swaller dis coon he'd jes' go to sleep ag'in in de mud an' ferget all about it.'—*Florida Times-Union*.

Iowa Worms Demand Liberty

Hundreds of borers have been arriving at Ames the last few weeks by mail, but some of them have escaped before they reached their destination by boring holes through pasteboard packages, corks of bottles and paper wrappings.

As a result, the entomologists at Iowa State College who are



asked to identify the various pests request that the insects submitted be placed in a bottle containing a 3 per cent solution of formalin. This will kill the insect, but preserve it so that it may be identified.—*Better Iowa*.

Eucalyptus

(Continued from page 669)

California and has been much more widely used than any other species. This tree may be recognized by the bright bluish tinge of the young leaves, large angular warty buds covered with silvery bloom, long, sickle-shaped mature leaves which are larger than those of any other eucalypt, and the tall, smooth, mottled trunks from which the bark is shed in long ragged vertical strips. The blooming period of this species varies from November to March, the flowers appearing in dense cream colored masses of great beauty. In favorable seasons these flowers are an important source of honey and much depended upon by the California bee keepers.

There are apparently two well defined varieties of *Eucalyptus globulus* in Australia and both are growing in California. A form with small buds and capsules and scaly, whitish, tightly clinging outer bark is found widely distributed on lower slopes of hills throughout Victoria and southern New South Wales and it seems probable that the seeds of this form were sent to this country by Bishop Taylor and planted throughout Alameda and adjacent counties. T. J. Gillespie, of San Jose, who for a number of years manufactured a variety of articles from selected eucalyptus trees grown in that vicinity, claimed that these could be recognized by the above characteristics and that they had much better quality wood than most of the California grown trees. He called the variety "San Jose Blue Gum" and for some years collected and distributed seed to planters. The second form has larger buds and seed capsules, and rougher, greenish gray bark which is shed in long vertical strips. It is found naturally in Tasmania where trees 250 feet high are found scattered with a variety of other species in forests of the lowlands. The species is rarely found in pure stands either in Victoria or Tasmania.

The largest area of Blue Gum is in San Luis Obispo County between the towns of Arroyo Grande and Guadalupe where over six thousand acres of plantations were set out about 1910. The trees occupy a more or less rolling, sandy stretch of territory situated one to three miles from the ocean shore and known locally as the Los Berros Mesa. In spite of the sandy sterile character of the soil, the trees have made very good growth and now average between 60 and 75 feet in height and 6 to 8 inches in diameter. What was once a desolate, wind swept waste of sand and scrubby vegetation has been transformed into a real forest whose shady depths offer sanctuary to an increasing wild-life population, and in which the traveler can get as real a thrill of wildness and isolation as in most natural forest stands. The only difference is that the roads run in straight lines at right angles to the seemingly interminable rows of trees. It is a simple

matter to get lost for a time in this eucalyptus forest on a gray day, as the rectangular spacing of the trees and their regularity of size, make all parts of the area look very much alike; and when one gets away from a road into the interior of one of the large compartments, the gray-green mottled trunks stretch away from him on all sides in a maze of criss-crossing and diagonal lines which are confusing indeed. To that person who prides himself on his sense of direction or boasts that he was never lost in the woods, I recommend the Los Berros Eucalyptus forest on a foggy day.

In the depths of this forest one will suddenly come upon a dwelling with its windows gone and doors rotting from their hinges, or a tumble down barn or shed, indicating that some of this land was formerly occupied by a farmer who attempted to eke out a living from the sterile, sandy soil by growing beans or rye and getting half a crop about once in three years. One is forced to the conclusion that even though there is no immediate use for these plantations except for firewood, this land like so many similar areas of doubtful fertility, is really more productive and less wasteful of human effort as a forest than as a farm. If the problems incident upon a widely scattered ownership of this forest can be satisfactorily solved and a satisfactory use for the timber developed, it may yet be that this great area of eucalyptus will yield a moderate return on a reasonable investment charge though such returns will necessarily be much smaller than that anticipated by planters of trees in the boom days.

The Blue Gum grove on the Campus of the University of California was set out in 1885 under the direction of Dr. E. W. Hilgard of the College of Agriculture, who was always intensely interested in tree planting. It is now one of the most beautiful features of the campus and occupies a position of prominence. The spacing of the trees was originally 7x7 ft., but it has been periodically thinned to allow for growth and the present spacing is about 7x14 ft. It is slightly less than one acre in area. When thirty-five years of age, the trees averaged between 140 and 150 feet in height and the mean annual growth was found to be approximately seven cords per acre. The outside trees are somewhat shorter than the others and carry branches well down towards the base so that the grove, when viewed from a distance, rises from the plain of the campus like a huge green globe. It now shelters the "Forester's Circle" of huge logs hewn into seats where meetings of the Forestry Club of the University are held in the glow of the camp fire, and its care and future development have been given into the keeping of that organization. So in a sense this grove has become a symbol of the forest development of California.

Living Trees

**Guaranteed
to live!**

for Friendship!

**Will grow into
big Trees!**

WOULD you like to send your friends a greeting that is different this year? Surely it would be a happy thought to give a few special friends something that is better than a card—but not much more expensive.

These Letters From Users Were Unsolicited

From New York City:

"The two Guild Trees I bought before Christmas are flourishing finely. One can almost see them grow. They are both a pleasure and an amusement."

From Haverford, Pa.:

"The trees arrived in good time for Christmas, were in excellent condition, and were very much admired. As I gave them as favors, I have been interested in keeping in touch with the guests who were given the favors, and they are unanimous in their pleasure in watching the little trees grow."

From New York City:

"Many friends have admired them and asked about them, so I hope it has meant and will continue to mean, new friends for your organization."

From West Nyack, New York:

"It came in perfect condition and will be cared for. The nine original trees are growing beautifully and are a joy."

From New Rochelle, New York:

"I wish to acknowledge the receipt of the Guild tree which was sent last week. It is a beautiful tree and was in excellent condition."



A New Kind Of Christmas Greeting!

From Saugerties, New York:

"The tree has been planted out of doors of course, and is growing and in very fine condition. I am enclosing an order for a few more plants."

From Charles P. Taft, 2nd, Member of the National Council and General Board of Y. M. C. A.:

"Success to the Living Tree Guild! I know of no other organization like yours; and I am told that there are no trees grown more conscientiously."

From Paterson, New Jersey:

"I enclose check in payment for one dozen trees as advertised in last Sunday's N. Y. Times. The tree I had of you last Christmas was perfectly satisfactory and is now planted and apparently growing finely."

From Queens Village, New York:

"It is a beautiful tree. As I need some more shrubs or evergreens surely will turn to you for my supply."

From Paul H. Davey, Vice-President of the Davey Tree Expert Co.:

"I wish to congratulate you upon the splendid enterprise which you have undertaken to promote the planting of little trees on the part of thousands of people."

Order today

Every Guild Tree is individually prepared!

THESE trees must be ordered in advance. Don't put off sending for yours.

There is nothing else like these Guild Trees in America. They are grown entirely from seed imported from Scandinavia. This is planted on the shore of Cupsuptic Lake, in the heart of the Maine Woods. The trees are transplanted several times so as to develop the hardiest root systems.

Hundreds of thousands of Guild Trees are being grown in this way. There is no road to the Cupsuptic Nursery—it is accessible only by boat. It is one of the most romantic spots in the world.

Under such conditions these trees develop root systems that are marvels of horticulture. Guild

Trees can be shipped all over the United States, and will arrive as green and fresh as the day they were taken from the ground.

Last year the Living Tree Guild shipped Guild trees to Honolulu. Six weeks later we received word that the little trees had arrived in perfect condition. Guild Trees have also been shipped successfully to England.

Will you be among the thoughtful people who will send out these lovable greetings this year? They will carry the message of permanent life and growing friendships to young and old.

**THE
LIVING
TREE GUILD**
Dept. 610

303 Fifth Avenue
New York, N. Y.

Enclosed please find check for \$_____ for _____ little Guild Trees, complete as described.

(Note: Unless immediate delivery or special date is requested, your trees will be sent between December 5th and 15th.)

SPECIAL SALE PRICES

Prices complete in corrugated mailing cartons, with instructions for growing and greeting card all ready for sending.

1/2 DOZEN \$5.75
1 DOZEN \$10.50
100 TREES \$75.00

[If you request, your little Greeting Guild Trees can be shipped direct to your individual friends, fresh from the nursery just before Christmas. No extra charge for postage.]

These GUILD TREES have been grown with such care that they are as nearly 100 per cent hardy as is possible. However, if instructions are followed, and the tree should fail to live, it will be replaced in the spring without cost upon application. This guarantee of THE LIVING TREE GUILD is good until June 1, 1928.

Name _____

Address _____

Town _____

State _____

(A reservation may be made without payment if you prefer to pay the postman on delivery.)



AROUND THE STATES

WITH

THE AMERICAN FORESTRY ASSOCIATION



Michigan Conservation Commission Loses Young

Following an executive meeting of the Michigan Conservation Commission on October 5, announcement was made of the resignation of Director Leigh H. Young who was appointed last January by Governor Fred W. Green.

It is understood that Mr. Young opposed many of the acts and policies of the Commission and that he refused to conform on matters which he felt were not good conservation. His resignation was requested by Governor Green and was first offered, it is said, on September 19.

William H. Loutit of Grand Haven, has been named Executive Director temporarily, and George Hogarth, former Secretary of the Commission, Acting Director. Mr. Loutit will spend as much time as possible in Lansing but has business interests which occupy him rather fully.

The reorganization of the Commission is rumored to be the outcome of an upheaval following the death of the late James Oliver Curwood, who was one of the Commissioners and who was out of harmony with the Director.

Mr. Young has returned to his work as Professor of Forestry at the University of Michigan.

Secrest Heads State Foresters

Edmund Secrest, State Forester of Ohio, was elected president of the Association of State Foresters at their annual meeting at New Haven, October 3-6. Chapin Jones of Virginia was re-elected secretary.

Among the important measures discussed were the McSweeney Forest Research Bill to the principles of which the Association gave its endorsement,

and the seed and planting stock distribution section of the Clarke-McNary Act. There was quite a general feeling among the state foresters that the limitation authorizing only \$100,000 a year for this purpose on the part of the Federal Government should be raised so that planting stock could be furnished to other land holders as well as farmers. Inasmuch as the present authorization has never yet been reached in an appropriation, however, no action was taken looking toward urging amendment at the present time.

The dates of February 17 and 18 have been set as the time of the Annual Meeting of The American Forestry Association. As announced in last month's issue, the meeting will be held in St. Louis. Details of the program will be published later. Reserve February 17 and 18 on your calendar now.

One of the most interesting sessions was held Tuesday night at Sage Hall, where the state foresters were guests of the Connecticut Forestry Association and the Yale Forest School. This followed a dinner at the Graduate Club.

The following men attended the conference: Frederick Dunlap, of Missouri; George R. Phillips, of Oklahoma; E. O. Siecke, of Texas; C. L. Harrington, of Wisconsin; W. R. Hine, of Louisiana; Edmund Secrest, of Ohio; R. S. Maddox, of Tennessee; Roy L. Hogue, of Mississippi; B. M. Lufburrow, of Georgia; Joseph H. Holmes, of North Carolina; Chapin Jones, of Virginia; F. W. Besley, of Maryland; George H. Wirt, of Pennsylvania; C. P. Wilber, of New Jersey; W. E. Jackson, Jr., of Kentucky; William G. Howard, of New York; Austin F.

Hawes, of Connecticut; William A. L. Bazeley, of Massachusetts; J. H. Foster, of New Hampshire; Robert M. Ross, of Vermont, and V. C. Isola, of Maine. In addition to these representatives, a number of other well-known men from the states attended, including H. O. Cook of Massachusetts, A. S. Hopkins of New York and H. L. McIntyre of New York.

Georgia Forms Fourteen Forestry Bodies

B. M. Lufburrow, State Forester, reports that 14 timber protective organizations have been formed in Georgia and are being assembled by the State Department.

These 14 organizations are: Homerville, in Clinch County; the Suwanee River, at Fargo; the Atkinson County, at Pearson; the Appling County, at Baxley; the Georgia-Florida Investment Company, at Folkston; the Berta Mineral Company, at Kingsland; Benedict & Rue, at Brunswick; Enotah Mountain, at Blairsville; the Gaskins, at Nashville; H. F. Sears, at Lakeland; R. Simpson, at Lakeland; Springer & Martin, at Lakeland; W. T. Brinson, at Waycross, and the Emanuel County, at Graymont.

Vermont Cuts Two Million Christmas Trees

The report for the 1926 cut of Christmas trees in Vermont recently completed show that 1,385,848 trees were shipped out of the State. This represents 866 carloads, an increase of 170 carloads and 50,588 trees over the 1925 season. The survey also indicated that the large cities of the East and Middle West are the greatest users of Green Mountain Christmas trees. The figures compiled were for trees shipped from the State by rail only. When home consumption and auto shipment are included it is probable that the total cut of trees in the State will exceed two million.

\$15,000.00 in cash prizes for a slogan about WOOD

Get the facts regarding the ever increasing uses for wood. You may win a first prize of \$5,000. Fifty-seven prizes in all. Read the following paragraphs carefully. Then mail attached coupon for free booklet. Contest closes December 15



In thinking about your slogan for wood, bear in mind that one-fourth of all the land in the United States is covered with forests!

These vast forests are continually growing; unlike other natural resources, wood constantly renews itself through the ages.

Thus you see that timber is a crop—a crop of boundless value to the entire nation. Failure to harvest it when ripe means waste, as in the case of any other crop of the soil.

Leaders of the lumber industry, manufacturers of *American Standard Lumber*, are producing from the mature timber clean, sound lumber. They are grading it according to new and stricter quality rules; thus it goes to the user as a standard product conforming exactly to his needs.

Wood ever in demand

Beautiful, durable, economical, and of amazing adaptability, wood is steadily extending its markets both for established uses and for new uses.

Famous historic mansions of early Colonial Days, still occupied and still in excellent condition, are of wood construction. So, too, are a majority of modern residences. In fact, three-fourths of all the homes in this country are built of wood.

For fine furniture, wood is of course the last word—both in craftsmanship and in beauty that endures. There are countless wood chairs, tables and desks still in active service which have passed the century mark!

The use of wood for window frames and sashes is advancing with giant strides. The largest and newest hotel in the world—The Stevens, Chicago—is so equipped.

And what flooring has ever equalled the comfort and beauty of wood? Today, wood flooring is standard construction in buildings of almost every type.

Wood for shuttles, spools and bobbins! Wood for millions of boxes, baskets,

crates and barrels! Wood for silos, granaries and mining timbers!

There is a wood for every use and a use for every wood. Wood is a material of primary importance in most of our great industries.

Keeping step with progress

Our modern ships require wood in scores of ways, from stem to stern. The railroads annually demand more than 110,000,000 wood cross ties, and huge quantities of lumber for box cars, refrigeration and hundreds of other needs. The automobile industry alone uses a billion and a half feet of lumber a year!

Wood has built thousands of derricks for our gushing oil wells, has helped to make moving pictures one of the world's leading industries, has played an important part in the development of the radio, and has sent the airplane winging over land and sea.

Lumber made immune to fire and decay by suitable fire-proofing and preservative treatments is increasingly available to modern markets, both in construction and in industry. Wood is destined to be America's most universally useful material, adaptable to the widest range of purse and purpose.

Manufacturers of *American Standard Lumber* in the National Lumber Manufacturers Association believe a better understanding of the industry and a greater appreciation of wood will be of advantage both to users and to the manufacturers. To obtain a slogan for its campaign of information, the Association is conducting a nationwide contest with liberal prizes. To qualify, send for free booklet, "The Story of Wood." Please use the attached coupon. Remember, the contest closes December 15.

NATIONAL LUMBER
MANUFACTURERS ASSOCIATION
P. O. Box 811, Washington, D. C.
Manufacturers of American Standard Lumber

This free Booklet
may mean
\$5,000 to you
Send today!

Mail coupon below or write for booklet which will be sent you postpaid. It contains the Official Blank On Which Your Slogan Should Be Submitted. This may mean \$5,000.00 added to your bank account. So mail your coupon right now.

First Prize . . . \$5,000
Second Prize . . . 2,000
Third Prize . . . 1,000
Four Prizes (each) . . . 500
Fifty Prizes (each) . . . 100

(In case of tie for any of the prizes offered, the full amount of the prize tied for will be paid to each tying contestant.)

Contest closes December 15th



National Lumber Manufacturers Association
P. O. Box 811, Washington, D. C.
Gentlemen:—I want to enter your \$15,000 Prize Slogan Contest. Please send me free copy of your booklet, "The Story of Wood," so that I may qualify.

Name.....
Street.....
R. F. D., Town or City.....
State..... AFFL-1127

True Moccasins



Going Hunting?
Experienced Sportsmen prefer and wear
BASS TRUE MOCCASINS
They are best for your feet and your disposition.



Write to
G. H. BASS & CO.
DEPT. W WILTON, MAINE

The Original American Footwear!

Russell's

"Neverleak" Chief

Not merely a boot that can be used for hunting, but one built expressly for that purpose, by a concern that "knows how" and has proven it.

Ask your dealer to show you Russell Boots or write for free catalog to

W. C. Russell Moccasin Co.
Berlin Dept. W Wisconsin




Never-rip seam

Committee Takes Up Plans For National Arboretum

Plans for the establishment of the National Arboretum, authorized by the last Congress, have been discussed at informal meetings of the newly appointed advisory council. With the probability that an appropriation for the purchase of land will be passed at the next session of Congress, along with the deficiency bill, of which it forms a part, various phases of the project are now receiving consideration.

The Department of Agriculture has estimated that about a year will be necessary, in which to acquire land, before the actual laying out of the grounds can begin. In the plans already discussed, emphasis has been laid upon the research features, which are to be emphasized more than the recreational aspects.

The site, which has been tentatively selected, lies upon the Anacostia River, within four miles of the center of Washington. Part of the land is now under government ownership, and is being reclaimed from its original swamp condition. The location of the arboretum at this point means that eventually it will lie along or near the proposed new parkway entrance to the city. A new boulevard, which will connect Washington with the northern and eastern cities will, at some future time, be opened up along the Anacostia valley, in which the arboretum site is also located.

WANTED

Live, bald-headed eagle, three to six years old. Write stating price, age and condition of bird.

D. E. FELT
432 Wellington Ave. Chicago, Ill.

ATTRACT WILD DUCKS AND FISH



WISCONSIN AQUATIC NURSERIES, Box 331, Oshkosh, Wis.

Natural aquatic food plants will bring thousands of Wild Ducks to your favorite waters. Plant now. **WILD RICE, WILD CELERY, PONDWEED SEEDS** guaranteed to produce results. Prices reduced, extra discount on early orders. Write for expert planting advice and literature.

Census Of Britain's Woodlands Reveals Serious Situation

By A. EDWARD HAMMOND

According to reports, the primary results of the census of woodlands of Great Britain, inaugurated by the British Forestry Commissioners, reveal a serious situation with regard to immediate reserves of timber. Of conifers, there remain 70,330 acres, and of mixed woods there are 77,180 acres. These are 80 years old and equivalent to about a nine months' supply of saw timber. This, as far as it is accessible will probably be felled during the next few years, and those coniferous and mixed woods of 41 to 80 years old which would normally replace the pre-war reserve, are now being felled for revenue. The commissioners state that the position as regards reserves of standing coniferous timber will gradually grow worse until the post-war plantings begin to become effective.

There is at present a large supply of second and third class hardwoods, chiefly oak; but the outlook for a continued supply of good oak is very bad. Oak planting has almost ceased, and this combined with failure over the last 40 years to plant on an adequate scale means that the supply of mature oak on a commercial scale will ultimately cease, as the existing large area of oak over 80 years old will gradually be felled for revenue, and if regenerated at all will be planted with conifers.

Vermont Mountain

SILVER BLACK AND RANCH
RAISED BLUE FOXES

The story of these foxes is a liberal education in profitable enterprise. Breed from the best only. Let us tell you about it.

(Morton H. McAllister, Owner)

**VERMONT MOUNTAIN SILVER
FOX RANCH**
Barre Vermont



BORESTONE

—the blue-ribbon strain that won the Grand Show Championship for the sixth time at the recent National Fox Show in Portland. Ranches in Maine and California. Send for booklet.

Borestone Mt. Fox Co.
621 PACIFIC-SOUTHWEST BLDG.
PASADENA, CALIF.

SHERBORN FOXES

In addition to the pleasure and profit derived from raising Silver Black Foxes, an added attraction can be had by using part of the ranch for the growing of beautiful trees and shrubs.

On my ranch at Sherborn, Mass., I have fifty-four different kinds of trees and flowering shrubs, which makes a handsome setting for my choice collection of Silver Foxes.

SAMUEL F. WADSWORTH,
M.D.V.
26 Cumington St. Boston, Mass.

Tarnedge Foxes

Established 1910
THE PRIZE WINNING RANCH
35 Pairs of Breeders
35 Pairs of Prize Winners
All Foxes Bred and Offered for Sale are from Prize Winners Only

Grand Show Champions
Sweepstake Winners
Blue Ribbon Winners

The Oldest Ranch in the U. S.
Catalogue
SABATTIS, N. Y.

TO OWNERS:

—of Farms, Woodlands
and suburban places:

Inquire into an established profitable industry to replace chicken yard, kennel or pig sty. Multiply your financial return many times over (three ladies made \$25,000.00 profit.—U. S. Govt. Bulletin).

Why not inquire? Send 9 two cent stamps for U. S. Govt. Bulletin on **FOX RAISING**—It's complete.

OR send a Postal Card for Fox Information. Address:

SILVER FOX
Breeders Bureau
Box N-426
Pleasantville, N. Y.

Murray Fox Farm

TRAVERSE CITY, MICH.

Murray Foxes have won the highest Honors in American National Shows including a

GRAND SWEEPSTAKES Champion

Our Booklet "BLOOD WILL TELL" is yours upon request

FOXES PAY BEST

FUR FARMS PAY

Alaska Eagles Disappearing

That the American eagle in Alaska is disappearing under the present bounty system, is the report recently issued by Dr. T. Gilbert Pearson, President of the National Association of Audubon Societies, who has just returned from the northern territory.

"While there are many eagles in Alaska," said Dr. Pearson, "it is very plain that the bird is far less numerous than a few years ago. Between Ketchikan and Haines, a distance of eighty-eight miles, I found thirty-seven of these great birds, but in other sections of the coast they were very scarce."

Official records of the bounties paid up to August 4, 1927, according to Karl Thiele, Secretary of Alaska, showed that the feet of 40,753 eagles had been turned in for the \$1 bounty.

Arizona Gets Buffalo Herd

D. E. Pettis, Arizona State Game Warden, recently announced the purchase by the State of 40 head of buffalo. The herd is in House Rock Valley, which lies just west of Lee's Ferry on the west side of the Colorado River, and on the edge of the Kaibab National Forest and Game Preserve. The buffalo comprising this herd have been in House Rock Valley for a number of years, having been left there by "Uncle Jimmie" Owens and Buffalo Jones after they had been driven from Texas to Montana and back again. The increase in the herd last year was 15 calves, and so far this year there are 8 calves.

1927 Fish Distribution

The Bureau of Fisheries has completed a survey of its fish-cultural activities for the fiscal year ended June 30, 1927, and reports an output of 6,473,383,000 "fish units," so called because eggs, fry, fingerlings, and adult fish are included therein. This is the first time in its years of hatching and distributing fish that the bureau has achieved an output as great as 6,000,000,000. More than 5,000,000,000 of this amount represents the eggs and fry of only four marine species—the cod, haddock, pollock, and winter flounder. More than 300,000,000 of the remainder comprised other important commercial fishes, such as the Pacific salmon, Great Lakes whitefish and herring, shad and pike perch or wall-eyed pike, as well as the lake trout.

The public is most familiar with the activities of the bureau in stocking interior waters with game fishes. Approximately 117,000,000 of the strictly game fishes were distributed during the past fiscal year. Part of these were raised at the various hatcheries situated throughout the country, while some were derived from the salvage work conducted in the overflowed areas of the upper Mississippi. In order to deposit these

fish in waters in which they might grow to maturity the bureau's distribution cars traveled 63,300 miles, while detached messengers carrying fish traveled an additional 363,565 miles.

In spite of an annual increase in the production of game fish the demands of the anglers can not be met fully and a considerable number of applications must be carried over each year to be filled from the next season's output. This is due largely to the fact that in many sections of the country the provisions of an initial stock, which by natural reproduction will replenish the waters, does not suffice and the hatcheries must provide the fish that the sportsmen are to capture.

Biological Survey Seeks Cooperation Of Hunting Clubs

An effort is being made to enlist the cooperation of wild-fowl hunting clubs throughout the United States and Canada in reporting to the United States Biological Survey their bags of wild ducks and other migratory game birds taken during the 1927-28 open season. This information is desired as a basis, in part, for determining whether migratory game birds generally are increasing or decreasing. It will be of value in formulating regulations for their protection.

Paul G. Redington, chief of the Biological Survey, states that "this cooperation from the sportsmen and sportsmen's clubs of this country and Canada will be of great benefit not only to the birds but to the sport as well." Clubs and individuals interested are requested to communicate with the Biological Survey, Washington, D. C.; instructions and forms will be furnished.

First Commercial Forestry Conference

A commercial forestry conference, representing all types of wood-using industries and forest owners throughout the country, will be held in Chicago, Illinois, November 16 and 17. A committee, headed by Everett G. Griggs, president of the St. Paul and Tacoma Lumber Company, Tacoma, Washington, has been named to formulate a program for the discussion and definition of a practicable policy of commercial forestry which will assure a permanent supply of timber to meet national industrial requirements.

The conference will also consider steps to be taken by the forest owners towards the solution of commercial forestry problems on a national basis. Beside timber owners the conference will be attended by representatives of the lumber industry, paper and pulp interests and various industries dependent upon wood as a raw material, foresters, fire insurance companies, scientists and government officials.

SCOTTISH TERRIERS

Beautiful stock now ready for delivery.

Priced Reasonably

LOGANBRAE KENNELS
Rutland Vermont



IRISH TERRIERS

Have good dispositions: Make Ideal House and Auto Dogs; Love to Hunt and are devoted Companions. Handy size. Immune to most diseases.

A.K.C. Registration Guaranteed

DR. F. G. DRATZ
Hardrock Kennels Missoula, Mont.

PLANT WILD RICE NOW!

If you want more ducks next fall, Terrell's Wild Rice will attract more ducks and geese to waters near you. Now, before the freeze-up is ideal planting time.

Helpful literature. Write
TERRELL'S AQUATIC FARM
6 C. Bk. Oshkosh, Wis.



WHITE'S GAME PRESERVE

Waterlily P. O., Currituck Sound, N. C.

One of the very best Hunting Preserves in North America

DUCKS—GEES—QUAIL—SNIPE

Write for Reservation

NOVEMBER, DECEMBER, JANUARY
If interested in growing Wild Duck Foods, write us.

BOB WHITE QUAIL

Latest Free Folder explains stocking, includes letters from customers,—Game Officials, prominent sportsmen and clubs. Delivery, Feb., Mar., & April. Live arrival anywhere guaranteed.

ORDER NOW.

M. E. BOGLE

510 East Elmira, San Antonio, Texas



The makers of
Ipana Tooth Paste
believe in protecting
and preserving
forests as well as
teeth and gums.

**IPANA
TOOTH PASTE**

BRISTOL-MYERS Co.
40 Rector Street New York

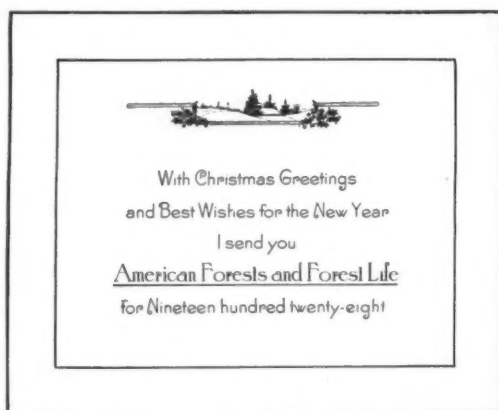
U. S.
HEADQUARTERS FOR IMPORTED ARMS
Mauser-Luger-Merkel-Scott-Webley
RIFLES, FIELD AND TRAP GUNS
Sportsmen—before buying
Send for our 86 page illustrated catalog. The most complete catalog of imported Arms ever issued in America.
25c in stamps.
A. F. STOEGER, INC. NEW YORK, N. Y.
224 East 42nd Street

For Christmas ~

*give remembrances that
last throughout the year
and renew your best wishes
the first of every month*



SOLVE that perplexing Christmas gift problem by sending AMERICAN FORESTS AND FOREST LIFE for 1928 to those friends who "have everything" and for whom it is difficult to select gifts. They will appreciate your thoughtfulness and thank you the first of every month during the entire year.



A Christmas card, engraved in three colors and signed with your name as donor will be sent each person.

Why wait until the last minute and frantically select the same old gifts without personality or distinctiveness? Send in your list today and be relieved of standing in line in crowded shops waiting for tired salespeople to show you the same old lines.

Shop early—use the form below—and have more time to enjoy your Christmas.

----- MAIL YOUR LIST ON THIS FORM TODAY -----

THE AMERICAN FORESTRY ASSOCIATION,
1523 L Street, Northwest,
Washington, D. C.

Please enroll the following as members of our Association and send them AMERICAN FORESTS AND FOREST LIFE for 1928. Membership dues (1928) of \$4.00 for each new member are enclosed.

NAME

ADDRESS

.....
.....
.....

It is understood that the Christmas number and engraved Christmas card will be mailed so as to reach them Christmas morning.

FROM.....

Launch Aerial Attack On Forest Pests In Canada

An experiment in controlling the spruce budworm by means of poisoned dust distributed over the forest by airplane has been conducted by the Entomological Branch of the Canadian Department of Agriculture in cooperation with the Royal Canadian Air Force and the Provincial Forest Branch of Nova Scotia, on an area near Orangedale, Cape Breton island. The investigations were later continued on a larger scale in Guysborough county. The plan of operations was revised and checked by the Research Division of the Forest Service of the Department of the Interior.

The airplane employed was of the type used in the southern United States for dusting the cotton fields to control insects affecting cotton.

Powdered calcium arsenate and lead arsenate were distributed during flight from a specially designed hopper situated in the forward compartment of the plane. The machine flies within about twenty feet of the tree tops and a dense volume of the dust is swept backward by the wind from the propeller and swirls into and through the foliage in a wide swath, approximately one hundred feet in width, covering the foliage completely with a thin coating of powder.

The objects of the work in Nova Scotia during the past summer were to determine the most effective kind of dust and the poundage per acre necessary to kill the caterpillars of the spruce budworm and to determine the cost of the operation on a large scale.

Transplanting Ornamental Trees In Autumn

Most ornamental trees may be transplanted successfully in the fall if they mature their wood early, says *Horticulture*. Trees with soft, fleshy roots, like the magnolia or tulip tree, are, however, more safely planted in the spring. The larches and other trees that start into growth very early in the spring should always be set in the fall. When it is possible, still preserving the form of the trees, the tops should be reduced, as with fruit trees, to balance the loss of roots in digging. If the soil is poor where the holes are dug, rich, moist loam should be drawn to fill in about the roots, but strong fertilizers should never be placed in contact with the roots.

Very large trees are often transplanted in the winter. A large hole where the tree is to be planted is dug in the fall before the ground freezes and filled with leaves or old hay; the soil is then dug from about the tree roots, leaving a ball large enough to contain most of the roots of the tree. This ball of soil is left to freeze, and during the winter may be drawn upon sleds to the hole and be dropped in place, good soil being filled in about the roots in the spring as soon as thawing weather begins.

United States Will Own Pike's Peak Highway In 1935

Public ownership of a motor highway to the summit of Pike's Peak in Colorado, not later than December, 1935, is guaranteed by the action of Secretary of Agriculture Jardine who has accepted the offer of the Pike's Peak Auto Highway Company to convey to the United States its present highway to the summit of the famous mountain. More than 500 acres of privately owned land and all structures appurtenant to the operation of the road, were also accepted by the Secretary, subject to the reservation by the company of the right of use without competition and at prevailing toll rates until the close of the season of 1935. The offer was accepted in preference to the proposal of W. D. Corley to construct a second toll road to the summit of the Peak, on the opposite side of the mountain, with the understanding that at the end of six years the new road together with the present Corley Mountain Highway from Colorado Springs to Cripple Creek would become public property without cost.

In reaching his decision, Secretary Jardine expressed the belief that a single road to the peak would be sufficient to accommodate the public, and that a second road would cause needless disturbance of natural conditions and involve heavy expenditures for which no economic justification existed.

Indiana To Lease Forest Home Sites

The recreational possibilities of Clark Forest, Indiana's only State forest, may be greatly increased under a plan now being studied by the Division of Forestry of the State Department of Conservation. Camp sites may be leased to private individuals on a 2,500-acre tract of woodland immediately adjoining the State arboretum and nursery. Cabins may also be built, either by the State or by private individuals, and woods road will be constructed to develop the area.

The tourist attendance at the forest the past summer has surpassed that of previous years. New areas along the main forest road were cleared of brush and tables and chairs were provided for the accommodation of the public. This increased recreational development of the forest will enable it to give a great service, since it lies right along the Dixie Highway, New Albany, Jeffersonville and Louisville.

Lumber Trade Commissioner Appointed For South America

The appointment of Charles M. Ehninger, of New Orleans, as American lumber trade commissioner to South America has been announced by Dr. Julius Klein, director of the Bureau of Foreign and Domestic Commerce.

The new trade commissioner has been associated with the export business in New Orleans over a long period. Previous to the war, in which he served as a lieutenant of artillery, he was employed by a general

exporting house in that city. In 1919 he entered the service of the New Orleans lumber firm of G. Amsinck & Co. He served in practically all capacities in this organization, finally being made export manager. In 1922 he resigned to go into business for himself as an export lumber broker in New Orleans. In 1924 he became Superintendent of Latin-American Agencies for the American Pitchpine Export Company of New Orleans, remaining in this position until joining the staff of the Department of Commerce. Mr. Ehninger is thoroughly familiar with the various markets of Latin-America and the problems to be met in these areas by American exporters. During the past several years he has traveled extensively in West Indies, Mexico, Central America and countries of South America.

Washington Abandons Air Patrol

The State of Washington, which has maintained air patrol since the close of the World War, will discontinue this method of forest fire detection in favor of lookout stations on commanding points. The stations, it is pointed out, have proven more efficient than planes, because lookouts are on duty all the time, while airplanes are only able to pass over a forest region two to three times during the day. The fast air pilot also has difficulty in locating the fires with any degree of accuracy, while lookout men know their territory intimately and are able to locate the fires definitely. The airplane patrol has been of great value in arousing public interest, but for actual service in detecting fires the lookout is far superior, State officials declare.

Southern Appalachian Power Conference

The importance of flood control, outlined by John Parker, relief director of Mississippi Valley and former governor of Louisiana, and General Edgar Jadwin, chief of engineers, United States Army, featured the Southern Appalachian Power Conference, at Chattanooga, Tennessee, late in October.

Other interesting features presented to the conference were "Pernicious Interference with Operation of the Federal Power Act," by W. H. Onken, editor, *Electrical World*; "State Regulation vs. Government Operation," by A. G. Patterson, former president of the Alabama Public Commission; "Power Administration," by H. C. Couch, president, Arkansas Power and Light Company, and Mercer Reynolds, president, Chattanooga Chamber of Commerce; "River Flow Observations and Their Significance," by N. C. Grover, chief hydraulic engineer, U. S. Geological Survey; and "State Water Power Laws and Their Importance from the Standpoint of the Federal Water Power Act," by O. C. Merrill, secretary, Federal Power Commission.

Wooden Greeting Cards



The ideal cards for tree lovers

Actual thin slices of wood, admirably adapted to this use. Their durability, smoothness and delicate beauty of wood structure are a revelation.

Send \$1 for set of 5, all different

ROMEYN B. HOUGH CO.
Lowville, N. Y.

BIRD FILLING STATIONS

Patented July 13, 1924



No. 1, price \$1.50

No. 1 to hang from tree or bracket.

Feed the birds NOW and have them with you all winter.

IMPROVED AUTOMATIC
Suet always clean and accessible to last particle.

For smallest home or largest estate. Every home should have several.

Postage paid.



No. 2, price \$1.25

For window casings, porch columns, etc.

LEWIS P. KELLY, R. F. D. 4, Dept. A, Peoria, Ill.

WILD BIRD FOOD

Now is the time to attract Winter Birds

SUET CAKE WILL DO IT!

35c. a cake—3 cakes for \$1.00

Suet Cake Holders, \$1.25; Filled, \$1.50

Grain, Seed, Nut Mixture or Cardinal Sunflower Seed, 25c. a lb.—5 lbs., \$1.10
10 lbs., \$2.00, Postage Paid

PURITY BIRD STATION

R. R. Box 51 Northbrook, Illinois



One Hundred and Fifty Delightful True Stories About Birds, Animals, and Insects

Thrilling True Stories entertainingly told, and useful information about Birds, Animals, and Insects, that children will enjoy reading.

The book is divided into four parts, the first dealing with birds; the second with tame animals; the third with wild animals; and the fourth with general information regarding natural history subjects.

Three hundred pages; thirty illustrations; and twenty-eight feature pages. Bound in dark green cloth with illustrated jacket and cover stamped in attractive colors.

\$1.50 net

At All Bookstores, or

THE JUDSON PRESS
1701-03 Chestnut Street
PHILADELPHIA, PA.



BECOME A LANDSCAPE ARCHITECT

Dignified, Exclusive Profession not overrun with competitors. Crowded with opportunity for money-making and big fees. \$5,000 to \$10,000 incomes attained by experts. Easy to master under our correspondence methods. Credentials awarded. We assist students and graduates in getting started and developing their businesses. Established 1916. Write for information; it will open your eyes. Do it today!

American Landscape School, 103, Newark, N. Y.

WANTED

A broad gauged well trained man is desired by reliable landscape forestry firm to take charge of an Eastern District. In reply, please give experience and reference. Box 49, care of The American Forestry Association, Washington, D. C.

Trim Your Trees Yourself

It's easy if you use a Bartlett Jointed Tree Trimmer with a compound lever. Saves cost of buying several trimmers of different lengths. Prices F.O.B. Detroit. 8 ft. (2 sections) \$8.00; 12 ft. (3 sections) \$7.40; 16 ft. (4 sections) \$8.20. **BARTLETT MANUFACTURING CO.** 419 E. Lafayette Ave., Detroit, Mich.

BOOK REVIEWS

VENEERS AND PLYWOOD. E. Vernon Knight and Meinrad Wulpi, Editors. The Ronald Press Company, New York. Price \$6.00.

The purpose of the editors in compiling the vast amount of historical and modern facts available on the subject of veneers and plywood was to set forth in one easily accessible volume information which heretofore could be found only by wading through a long list of bulletins, histories, furniture books, and other fragmentary records. The subject is of interest not only to the student and teacher of industrial arts, but to the salesman of furniture and the prospective purchaser. A glance at the contents of a few of the thirty-three chapters will show just how the tremendous array of data has been handled: Chapter I, entitled "Evidence of the Use of Veneers in Earliest Civilization," discusses the veneering practices of the Egyptians, the Babylonians and Assyrians, the Greeks, Romans and Orientals; Chapter VIII covers the use of veneers and plywood in American Colonial Furniture; Chapter X discusses the present tendencies in furniture, the advance in artistic tastes and the evolution of furniture to conform to social conditions; Chapter XVIII is headed "Various Veneer Woods and Their Identification."

G. I. N.

THE LURE OF THE SMOKIES. By Robert L. Mason. Published by Houghton Mifflin Company. Price \$4.50.

Older than the Rockies, a geological paradise, a museum of wild life, and an art gallery of beauty, such is the Great Smoky region recently selected by the National Parks Commission as the location for an eastern National Park. Mr. Mason, thoroughly familiar with the peaks and valleys of the Great Smokies, presents a delightful picture of these mountains which lie on the boundary line between Tennessee and North Carolina. It is a picture rich in color and setting, a harmonious background for the picturesque inhabitants who graze their sheep on the mountain tops and distil their "moonshine" in the foothills. Mr. Mason describes the famous places of the region and speaks of the brave men who have blazed trails through this dangerous country. He quotes incidents and stories as related to him by the natives in their own peculiar vernacular, and also includes some old tales of the Cherokee Indians, the original Great Smoky inhabitants. The illustrations are mainly photographs taken by the author himself. They are typical of the people and scenery to be found on the Tennessee-North Carolina boundary line.—G. I. N.

OUR FIFTIETH YEAR 1878-1927



EDGE OF THE PINE GROVE

Seeds, Seedlings and Transplants

| 5 lbs. or more Per lb. | 2-year seedlings Per 1000 | | Transplants | Per 1000 |
|---------------------------|------------------------------|-----------------|-------------|----------|
| \$4.65 | \$10.00 | White Spruce | 7-14XX | \$78.00 |
| 1.45 | 10.00 | Norway Spruce | 4-8X | 32.00 |
| 5.75 | 20.00 | Colorado Spruce | 4-8X | 60.00 |
| 1.55 | 12.00 | Austrian Pine | 10-12XX | 225.00 |
| 1.50 | 16.00 | Japan Red Pine | 18-24X | 80.00 |
| 16.95 | 12.00 | Norway Red Pine | 5-8X | 35.00 |
| 5.25 | 20.00 | Douglas Fir | 12-15XX | 290.00 |
| 6.80 | 15.00 | Hemlock | 5-8X | 125.00 |

Special prices in quantity. Our New Complete Price-List is just published and contains many other sizes and varieties

KELSEY NURSERY SERVICE

Fifty Church Street

New York City

MANUAL FOR SMALL MUSEUMS. By Laurence Vail Coleman. Published by G. P. Putnam's Sons, New York.

Ninety per cent of the thousand museums in the country are of the "small museum" type, about one-half of which are attached to colleges and universities. Mr. Coleman's book deals with that other group of small museums, namely, those found in almost every community of fifty thousand or less inhabitants. Lately there has appeared an increased interest in the development of these museums, and the "Manual" just published forms an admirable guide for those who are inaugurating new institutions or desire to rejuvenate those already existing. Mr. Coleman takes up the organization of the small museum, its administration, the curatorial work involved, the field to be covered in education, the research to be undertaken, and many other important aspects of this work. The book is the result of a careful study of museum enterprises all over the country, and the advice and suggestions given are practical and workable. The chapters are illustrated with pictures of the best types of civic museums and their exhibits, and the author has appended five sections of valuable information on framing constitutions, laws of various states in support of museums, and a general reference list of museum publications.—G. I. N.



NURSERIES



AMAWALK NURSERY

MEMORIAL TREES

Particularly fine specimens of Oak, Maple, Elm, etc., for memorial planting. Trees from 15 to 30 feet are recommended. Each tree is recorded with The American Forestry Association to perpetuate its memory.

AMAWALK NURSERY
Amawalk, Westchester Co., N. Y.
Tel., Yonktown 128

NUT TREES

ORNAMENTAL TREES AND SHRUBS

Catalog Free—Established 1871
FELIX GILLET NURSERY
P. O. Box 81-A Nevada City, Calif.

CHINESE ELM

Best shade tree for the Southwest ever introduced. Send for catalogue and see what government authorities say about it.

400,000 Evergreens all sizes
Shrubs—Roses—Fruit Trees, etc.
BAKER BROS. NURSERY
FORT WORTH TEXAS



Native American Shrubs

Kalmias Rhododendrons, Azaleas

Highest quality plants shipped from the Appalachian Mountains in any quantity. For specimen and special planting we furnish nursery-grown stock from our Stroudsburg nursery.

Our General Catalog mailed on request
LABARS' RHODODENDRON NURSERY
Box 65-C Stroudsburg, Penna.

EVERGREENS TREE SEEDS

We specialize in growing trees for Forest Planting

THE North-Eastern Forestry Company
NURSERIES SEED HOUSE
Cheshire, Conn. Willboro, N. Y.

FRANKLIN FORESTRY CO.

Nurseries at
Colrain and Sudbury, Mass.
FOREST NURSERY STOCK
CONTRACT FOREST PLANTING
89 STATE STREET
BOSTON MASS.

PLANT THEM IN NOVEMBER

Beautiful New England
White Birch

4—6 ft. \$35.00 per 100
PIEDMONT FORESTRY CO.
BOUND BROOK NEW JERSEY

Established 1866
NAPERVILLE NURSERIES
NAPERVILLE, ILLINOIS
Plant material for Landscape, Horticultural and Forestry Projects
Choice line of
STRONG PERENNIAL PLANTS, TREES, SHRUBS,
VINES AND EVERGREENS
NATIVE PLANT MATERIAL
Catalog Upon Request Long Distance, Naperville No. 1

If you do not find what you want advertised in AMERICAN FORESTS AND FOREST LIFE

Write to Service Department
The American Forestry Association
Washington, D. C.

SEEDS

FOR FORESTRY PLANTING

My catalogue contains a complete assortment of varieties

Send for a copy
THOMAS J. LANE, DRESHER, PA.

TREES FOR FOREST PLANTING

PINE :: SPRUCE

CONIFERS ONLY

Write us for price list
KEENE FORESTRY ASSOCIATION
KEENE, N. H.

Orchids

We specialize in ORCHIDS! Our stock is the largest and most varied in this country. We sell orchids to Florists, Private Collectors, and Botanical Gardens. Will appreciate your orders whenever you need this kind of plant.
Send for Special List No. 79
LAGER & HURRELL
Orchid Growers Summit, N. J.

NORWAY SPRUCE

3 Yr. transplants 3-6", \$10.00 per M

BALSAM FIR

3 Yr. Seedlings 3-7", \$ 7.00 per M

WESTERN MAINE FOREST NURSERY,
Fryeburg, Maine.

Standard and Dwarf Fruit Trees

New and best varieties, 20 kinds. Flowering Apples, Flowering Cherries and other Flowering and ornamental plants; fine new raspberries described in Fraser's Tree Book. Sent free.

SAMUEL FRASER, Box F, Geneseo, N. Y.

PRINCETON PRODUCTS

ARE THE STANDARD OF EXCELLENCE IN ORNAMENTALS

A Complete Assortment of Hardy
Trees, Shrubs and Evergreens

PRINCETON NURSERIES
PRINCETON, NEW JERSEY

FRUIT TREES — GRAPE VINES

ORNAMENTAL TREES & SHRUBS

for

Southwestern Conditions

THE MUNSON NURSERIES
DENISON TEXAS

HILL'S EVERGREENS

Complete assortment of varieties for ornamental use. Price list free. De Luxe catalog in natural colors, 25 cents.

THE D. HILL NURSERY CO.
Evergreen Specialists
Box 501 DUNDEE, ILL.

GROW TREES FROM SEEDS

Send for catalogue of tree, shrub, perennial, palm, fruit and evergreen seeds.

CONYERS B. FLEU, JR.
GERMANTOWN PHILADELPHIA

Tree and Shrub Seed, Seedlings and Hardwood Cuttings

ROSEBANK NURSERY CO.,
HUNTSVILLE, ALA.

EVERGREENS

Varities and sizes suitable for forest planting—including Norway, White and Colorado Blue Spruce, Austrian, Scotch and Norway Red Pine.

Send us a list of your wants for prices.

THE BARNES BROS. NURSERY COMPANY
Yalesville, Connecticut

The Nurseries whose advertisements appear in AMERICAN FORESTS AND FOREST LIFE are chosen from the leading nurseries in their respective localities.

When writing for their catalogs—please mention AMERICAN FORESTS AND FOREST LIFE—It Helps.

BOXWOOD

Large and small specimens and hedge

Suffruticosa and Sempervirens

H. ERNEST CONWELL, Inc.
BOX 12 MILTON, DELAWARE



An Invitation To Join

The American National Red Cross will hold its Eleventh annual Roll Call from Armistice Day through Thanksgiving—November 11-24—when all are cordially invited to become members of this great organization. Membership dues paid at that time maintain the work of the Red Cross—local, national and international—throughout the coming year.

This Space Contributed By
THE AMERICAN FORESTRY ASSOCIATION

FOR SALE

Forest Lands—about 1700 acres adjoining Shenandoah National Forest. Thrifty young timber, numerous springs, wonderful scenery, near railroads. In the tracts are several small farms.

Owner, Box 50—care The American Forestry Association, Washington, D. C.

New York Rushes Development of Hook Mountain Park

Development of the Hook Mountain section of the Palisades Interstate Park, New York, as a new steamboat and motor excursion resort on the west side of the Hudson River, midway between the Palisades and the Harriman Park at Bear Mountain, is being rushed by the State Park Commission to make possible its enjoyment by the public in a large degree by next summer. Funds for this purpose have been allotted and construction equipment is now being assembled on the site.

Mussolini Plants Oak In Name Of His Latest Son

Premier Benito Mussolini, of Italy, observed an old Roman custom recently by planting an oak tree in the garden of the Mussolini villa at Carpena to commemorate the birth of his son. According to tradition the oak tree is supposed to assure long life and sturdy character.

The planting of the tree was attended with solemn ceremony; the local village chief acted as registrar for the infant. Arnaldo Mussolini, the premier's brother, and the prefect of Forli, acted as witness.

Utah Stockmen Protect Watersheds

Stockmen in the Chalk Creek Canyon section of the Fishlake National Forest, Utah, are taking every precaution to insure a regular water supply and protection against floods by maintaining the vegetative cover on the watersheds. Disastrous floods have swept this section for many years choking the canyons with boulders and debris, and in many places washing deep gullies in the bottom lands. Stockmen have become convinced that the severity of such floods was aggravated by overgrazing and especially premature grazing on the

watersheds. Numbers of stock on the range have been reduced and grazing periods shortened. Gradually the vegetation is coming back, it is reported.

Expert To Supervise Central Park Tree Work

James A. G. Davey, vice-president of the Davey Tree Company, Kent, Ohio, will serve as supervising expert in connection with the trees in Central Park, New York, according to Walter R. Herrick, park commissioner of that city. Final arrangements were made by Martin L. Davey, president of the Davey Company.

According to Park Commissioner Herrick, this is the beginning of a campaign to rehabilitate Central Park and restore it to its former leafy glory. An appropriation of \$1,000,000 has been made for this work.

Who Wants a Buffalo?

The Department of the Interior is again this year offering to dispose of surplus buffalo from the Yellowstone Park herd. This herd, developed from a small nucleus placed in the park several year ago, now numbers 850. Its rapid increase caused Congress to grant permission to dispose of the surplus.

While the Department prefers to dispose of bull buffalo, they will ship cows if especially requested. For exhibition purposes, however, the male is preferable, and the cow should only be requested in cases where it is desired to start a herd of bison.

Those desiring buffalo should make application to the Director of the National Park Service, Department of the Interior, Washington, D. C. Upon approval of the request, the park superintendent will be instructed to make shipment.

NOMINATE YOUR FRIENDS FOR MEMBERSHIP

Fill in the last line and mail the application to a friend. He will appreciate the courtesy.

Application for Membership in The American Forestry Association

Date.....

The AMERICAN FORESTRY ASSOCIATION

1523 L Street, N. W., Washington, D. C.:

I hereby apply for membership in The American Forestry Association and enclose

\$.....

INDICATE CLASS OF MEMBERSHIP DESIRED

- | | |
|--|----------|
| <input type="checkbox"/> Subscribing membership, per year, including Magazine..... | \$4.00 |
| <input type="checkbox"/> Contributing Membership, per year, including Magazine..... | 10.00 |
| <input type="checkbox"/> Sustaining Membership, per year, including Magazine..... | 25.00 |
| <input type="checkbox"/> Life Membership (no other dues for life), including Magazine..... | 100.00 |
| <input type="checkbox"/> Patron Membership (no other dues for life), including Magazine..... | 1,000.00 |
| <input type="checkbox"/> Annual Membership, without Magazine..... | 1.00 |

Canadian Postage 25c extra; Foreign 50c extra, on Subscribing Memberships

PLEASE LETTER OR TYPE NAME AND ADDRESS

Name.....

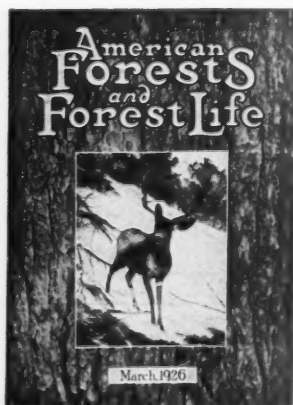
Street.....

City and Street.....

Business or Profession.....

Nominated by

November, 1927



American Forests and Forest Life is sent monthly to all except Annual Members

Housing The British Forest Worker

By A. EDWARD HAMMOND

The British Forestry Commission's scheme for the establishment of forest workers' holdings is meeting with success. This scheme differs from the agricultural small-holdings policy in that it does not attempt to provide full-time employment, the work on the holdings being ancillary to that in the forests. One hundred and fifty days' employment is guaranteed each year, mainly in the winter months, the pressing time in planting operations, leaving the worker free to work his own land in the summer, and to take advantage of other employment during hay and corn harvest.

Formation of these holdings began in the early summer of 1924, and at the end of September no holdings had actually been completed, but 35 were in hand. At the corresponding period in 1925, nearly 200 were either completed or in hand, while the last annual report of the commissioners indicates that 360 holdings are now in hand, 183 of which are already occupied by forest workers.

It is estimated that 750 holdings will be completed or in process of establishment by 1929, the end of the 10th year. The commissioners consider that this work is capable of considerable development, and that the number of holdings could be increased to 3,000 or 4,000 in the succeeding 10-year period.

The demand for the holdings continues good, more particularly in the light land districts, and where the scheme has been in operation for some time. In the heavy land districts, there appears to be more reluctance on the part of workers to risk their small capital on a business in which they have had no experience. In the eastern counties of England where the soil is of a very light and sandy nature, the 10-acre limit has been exceeded in order to render the holding of a more useful size, and in some instances, additions have been made to the holdings of rough grazing land for cattle. It is considered by the Forestry Commissioners that it will probably always be advantageous to have at least one holding of a larger type in each settlement, so that one of the forest workers may be encouraged to keep a pair of horses for work on his neighbours' holdings or for carting in the forest.

The Forestry Commissioners point out in their report that exceptional circumstances render the cost of forest workers' holdings less than that of ordinary agricultural holdings. For one thing, they have been able to purchase for forestry purposes at a moderate overhead price, estates which contain in many cases not only land which is suitable for agricultural cultivation but also houses which at a comparatively small cost in reconditioning have been made suitable for workers' dwellings.

It is also explained that in most cases local custom governs the style and type

of the buildings, but experiments are being made in different methods of wall construction such as timber, steel, concrete block and reinforced concrete with timber framing. The present limit of five holdings to every 1,000 plantable acres of forest land, it is considered, may have to be increased as the forests become ripe for thinning and other cultural operations.

Oregon Tests Fire Tools

In a recent test of tools for building fire trails, foresters of the northwest experimented with ten different kinds of plows and graders. The scene of the experiment was a typical yellow pine area on the Deschutes National Forest, Oregon. The tools tested included the Rubottom plow, the Beatty plow, the Oliver plow, an ordinary road drag, a modified drag called a ditcher, a road grader, a disk harrow and a road "scarifier." It was found that the share of ordinary plows invariably caught in roots and rocks and that all the drags were so close to the ground that they caught in brush. The implements that did the best work were the disk plow and a modification of the pan-buster.

Indiana Lumberman Gives Forest As Memorial To Wife

A forest preserve of 61 acres has been given by William A. Guthrie, well-known lumberman and for years head of the Indiana Conservation Commission, to the Nature Study Club of Indiana as a memorial to his wife, Mrs. Sarah Lewis Guthrie, who died last March. The preserve is near the Guthrie home at Dupont, Indiana.

In accepting the gift the Nature Study Club agrees to the terms of the trust conveyance, which specifies that no tree shall ever be cut down in the preserve or any of its wild life destroyed so long as the club or any nature study organization that might succeed it, is in possession.

Tree Experts Meet In Connecticut

Associates of the F. A. Bartlett Tree Expert Company, of Stamford, Connecticut, and scientific men from many State agricultural experiment stations, agricultural colleges and forestry schools recently attended an interesting exhibit at the Bartlett Laboratory of trees inoculated with diseased wood for experimental cavity work. More than a hundred trees have been exposed to this experiment for two years to determine the extent and rapidity of decay behind the various cavity fillings now in popular use. A study of these experiments was followed by a demonstration of improved power machinery for the excavation of cavities in trees. Short addresses were made by Dr. J. Franklin Collins of the State Department of Agriculture and Dr. G. P. Clinton, noted pathologist.

TREES IN WINTER

TREES are individually more conspicuous at this season. Tennyson wrote "black as ash buds in the front of March" illustrating the point that many trees are easier to identify in Winter than with Summer foliage. (Ask for our new list of helpful books and free bulletins on trees in Winter and Summer.)

Trees like animals must have food, water and air for their roots as well as for their leaves. Unlike animals they cannot move about for these necessities. That is why tree care (especially under conditions of cultivated areas) is interesting to every tree lover.

The Tree Care Service Bureau will soon issue a remarkable bulletin on a new way to save trees seemingly dead or dying from the effects of regrading or filling-in ground around trees, or from hard sun-baked soil. It will be invaluable to builders and landscape architects.

(Ask for free bulletin on "A New Way to Save Trees.")

The beauty of the average place (as well as of many individual trees) may be increased many times over by a little judicious pruning.

All tree problems can be more economically handled by tree specialists. They have the equipment and materials ready for correct use at low cost.

The Tree Care Service Bureau is an organization of leading tree specialists, who simplify routine work with intelligent service to obtain economical and lasting results: pruning, root feeding, spraying, cleaning out and filling rotting holes with materials that particular cavities will carry and frequently cover with new growth. Its membership includes:

MEMBERS

| | |
|---|--|
| HARRISON, MERTZ AND EMLEN 1713 Sanson St., Phila., Pa. | THE L. H. MEADER CO. Providence, R. I. |
| CHAS. F. IRISH CO. Bratenahl, Cleveland, Ohio | H. L. FROST & CO. Arlington, Mass. |
| MUNSON- WHITAKER CO. Tremont Bldg., Boston, Mass. | R. D. LOWDEN 1230 Great Plain Ave., Needham, Mass. |
| | HARRY C. FISCHER Bakertown, Pa. (near Pittsburgh) |

The U. S. Government issues Dr. J. Franklin Collins' "Tree Surgery and Tree Care." Let us send you a copy prepaid at cost (4 two-cent stamps).

Or send a Postal Card for Tree Care information. Address:

TREE CARE SERVICE BUREAU
N-27 Great Oak Lane, Pleasantville, N. Y.

Fur Ranching

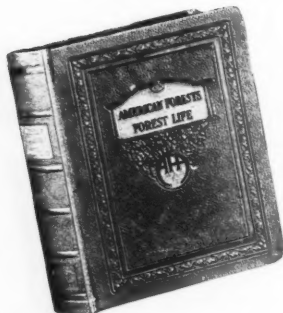
Our monthly publication—six years old—covers the entire field of breeding silver, cross and blue fox, mink, muskrat, beaver, raccoon, fur rabbits, karakul sheep, etc.

Send 25c sample copy. Subscription, \$2.00 per year.

**AMERICAN FOX AND FUR
FARMER**

Lock Box 61 St. Peter, Minn.

Order Your 1928 Binders Now



1928 is just around the corner. In two short months you will receive the January, 1928, issue of **AMERICAN FORESTS AND FOREST LIFE** with its many new features. Start saving your 1928 issues by having your binder on hand and inserting each issue as received.

No punching, "spare parts" or other annoyances to try your patience. Each issue can be inserted in fifteen seconds.

This binder is identical in workmanship and materials with those sold by other magazines for \$3.00 to \$5.00. It is strongly made and guaranteed to give satisfaction.

No profit is made in selling this binder to you. The price—\$2.00—merely covers the cost of manufacture, and stamps used in bringing it to you.

Each binder holds twelve issues and is guaranteed. Your money refunded if you are not more than pleased.

The American Forestry Association

1523 L St. N. W., Washington, D. C.

MAIL THIS COUPON—PRINT PLAINLY—

The American Forestry Association,
Washington, D. C. Date.....
Gentlemen:

Send me.....distinctive binders for
AMERICAN FORESTS AND FOREST LIFE,
postpaid, for which I enclose \$2.00 for
each binder. If I am not unusually well
pleased I will return them to you
promptly in 5 days, and my money and
postage will be returned to me.

Name

Street

City and State.....

Study Of Quail Enemies Made

Attention to the food supply and nesting cover of quail and to controlling the natural enemies of these birds will result in better development of quail preserves, according to the Biological Survey of the United States Department of Agriculture, which is participating in a cooperative quail investigation in northern Florida and southern Georgia. Destruction caused by wind, rain and fire cannot be controlled, but animal enemies may be kept in check. The investigation has shown that among natural enemies that eat quail eggs or prey on the nestings, the greatest destruction is wrought by skunks, cotton rats and snakes, although opossums, raccoons, weasels, cats, hawks, owls and crows also cause some losses. The fur-bearers have been best controlled by trapping, and the cotton rats by poisoning. Snakes depend on cotton rats for food, as well as on other small rodents, so that if the numbers of the cotton rats are reduced, the snakes may go elsewhere. Cooper hawks are destructive to quail and may be controlled by destroying their nests. Marsh hawks prey upon cotton rats and kill very few quail and may be considered beneficial.

Railways to Act on Lumber Memorial

The Memorial presented to the railroads of the United States by the lumber industry in regard to discriminatory freight rates on substitutes for lumber has been docketed for consideration by the General Committee of the Central Trade Association, the Western Traffic Executive Committee, the Traffic Executive Association and the Traffic Executives of the Southern Freight Association.

Many of the railway executives have evinced cordial interest in the Memorial, and more than 900 copies have been placed in the hands of interested railroad officials.

Waste Prevention Contest Announced

The National Lumber Manufacturers' Association has announced the rules for its 1927-28 Waste Prevention Contest, for which \$2,000 in prizes will be awarded. The first prize is \$750; second, \$500; third, \$250; and three prizes of \$100 each and four of \$50 each. The contest closes March 1, 1928.

Ideas or devices already on the market as commercial articles, whether patented or not, or which are providing an income for men employed in the lumber industry, will not be eligible for the prizes.

The purpose of the contest is to encourage men in the lumber industry to originate ideas, processes or schemes that may be practically used to effect savings in lumber in the course of its manufacture, or to lighten or facilitate the work of the manufacturing operation.

Meet To Boost Shade Tree Work In New Jersey

The second annual convention of the New Jersey Federation of Shade Tree Commissions was recently held at East Orange, with approximately 120 municipal and country shade tree commissions of the State represented. The purpose of the meeting was to establish a closer contact between the shade tree commissions of the State in an interchange of experience on mutual problems and at the same time to encourage and stimulate interest and activity on the part of the general public in the need for and the value of organized shade tree work.

Bird Houses Should Be Built In Fall

Because our native song birds have an extremely acute sense of smell and will refuse to nest in any house that has not had time to weather, bird houses should be built in the fall. If the houses are put out in the spring before the birds arrive from the South, they will be driven away by fresh paint or even the lingering odor of human hands. If the houses have had an opportunity to weather throughout the winter, the songsters will be attracted to them.

Birds around the garden or grounds of a home add materially in keeping down insect pests. A number of bird houses properly seasoned and constructed to attract the songsters will make the grounds a bird sanctuary.

Proceedings Of International Forestry Congress Now Available

The International Institute of Agriculture, at Rome, has announced that the proceedings of the International Forestry Congress, held in Rome in May, 1926, are now available for distribution. The proceedings contain the reports and communications made to the Congress and form a series of five volumes of 750 pages each, with about 300 photographs and diagrams. The fifth volume is still in preparation. It will contain the speeches, reports of meetings, resolutions, etc., and will be available shortly.

The proceedings will be of special interest to all engaged in forestry work, since they contain reports on every possible subject connected with forestry—statistical, political, economic and legal; also on technical problems relating to forestry and forestry operations. One volume is entirely devoted to the reports presented on the control of torrent waters, reforestation of mountain areas, plant diseases, game and fisheries, together with questions of tropical forestry reserves and uses of timber of tropical countries.

The price of the proceedings to members and associate members is \$9.54, and to those who are not members \$16.35. Orders for the proceedings should be mailed to the International Institute of Agriculture, Rome, Italy.

Secretary Hears Appeal From Greeley's Mount Hood Decision

On October 13, proponents of the project for a tramway to the summit of Mount Hood appealed from Colonel Greeley's decision to withhold the necessary permit. The hearing was held by Secretary William M. Jardine at his office in Washington.

L. L. Tyler, engineer and promoter of the project, sketched the history of his efforts to interest capital and said that his corporation also desires the hotel concession on the mountain top. He asserted that the construction proposed would not disfigure the mountain and urged the advantage of the proposal to multitudes of people who were not able to qualify in the sturdy mountain climbers' class. He appealed directly to the Secretary for a reversal of Colonel Greeley's decision.

Mayor Baker of Portland made a plea for the project as a means of drawing people to the northwest and affording the great masses of the public the opportunity to view the wonders of Mount Hood's summit comfortably and safely.

U. S. Senator Frederick Stiewer of Pendleton, Oregon, spoke briefly of the great number of appeals which had come to him to use his influence in favor of the project.

State Senator Gus C. Mozer of Portland, emphasized the services of the project as a means of inducing people to see America first.

J. J. Underwood of the Seattle Chamber of Commerce read a resolution from that body and urged the reversal of Colonel Greeley's decision. He called attention to the great drawing power which Alpine railroads and tramways had exerted on visitors to Austria and Switzerland.

Ezra Meeker asked to be heard, and told briefly of passing near Mount Hood seventy-five years ago with an ox team. "There was no one there at that time to argue the question," he said, speaking for the Oregon Trail Memorial Association, and declared that the pioneers wanted the mountains left as nature had given them and not turned over to commercial enterprises. The aged mountaineer made it plain that he did not come to oppose this particular project, except as it served to set a precedent which might spread widely.

Marshall McLean, speaking for the Camp Fire Club of America, called Secretary Jardine's attention to the latter's position as a trustee of these points of loneliness and grandeur in the mountains, from which men draw inspiration, and briefly urged that the decision be allowed to stand.

Dr. John C. Merriam, of the Carnegie Institution of Washington, while stating that he had come to be informed, added that he felt that the decision should be less a commercial matter of attracting people to the northwest than of bringing about an appreciation among the citizens of the northwest and visitors to that section, of

the spectacular grandeur, and also the dynamic story of the great national features.

Philip W. Ayres, speaking for the Appalachian Mountain Club, pointed out the failure of the Mount Washington tramroad in the White Mountains as a commercial enterprise, and to the abandonment of many roads constructed to summits of eastern mountains. He added that projects that made the ascent of mountains easy do not deter daring mountain climbers from risking their lives. Mr. Ayres also presented a resolution from the Massachusetts Forestry Association urging that Colonel Greeley's decision be upheld.

Charles Sheldon urged that the Secretary move slowly in granting the permit until we learn more as a people where we stand with respect to a policy of commercializing wilderness areas.

Colonel Greeley summarizes his position by telling how the wilderness areas which up to recent times we have all taken for granted, were shrinking before logging operations, mining and irrigation and water power development. He said that he believed we should plan deliberately to save certain areas where economic pressure does not make it impossible. He mentioned a number of similar applications throughout the mountains in the western National Forests and said that the granting of this permit constituted a precedent and placed upon the Government a moral responsibility to grant further concessions in the interest of supporting this investment as well as for similar projects elsewhere. He indicated that it amounted to letting down the bars and that its effect might be far-reaching in obliterating our remaining wilderness.

Aiding The Field Man

The field man in forestry, campers, hunters and followers of outdoor life are constantly being aided in their work or sport by novel equipment. One of the most useful and recent contributions to the outdoor man is a small optical kit, handily packed or carried, consisting of a pocket telescope to view distant objects that are difficult to see with the unaided eye; a microscope that magnifies minute objects fifty diameters or more; a vest pocket magnifying glass that may be used as a reading glass or for examining the structure of plant and animal life; and a pocket compass that may be used on either land or water.

Society of American Foresters Will Meet In San Francisco

Members of the Society of American Foresters will meet for their annual session in San Francisco on December 16 and 17 following a meeting of forest school representatives December 15. Field trips to forestry operations on public and private holdings will be arranged for three days following the sessions in San Francisco.

Mention AMERICAN FORESTS AND FOREST LIFE—It Helps

COMMERCIAL FORESTRY

Our advice on management, fire protection, silvicultural treatment, improvement thinnings, and utilization of forest products will prove of value to timberland owners. It is comprehensive and reliable, being based on over forty years experience as timberland factors.

**TIMBER CRUISING
MANAGEMENT OF TIMBERLANDS
TIMBERLAND APPRAISALS
PURCHASE AND SALE
FINANCING OPERATIONS
FOREIGN EXPLORATIONS
LIQUIDATION OF PROPERTIES
GENERAL CONSULTING**

Inquiries are solicited

James D. Lacey & Co.

Chicago—Seattle—New Orleans
350 Madison Avenue, New York

Affiliated with

**JAMES D. LACEY & CO.
(CANADA) LTD.**

Montreal—Vancouver

THE JAMES D. LACEY CO.

Jacksonville, Florida

P. T. COOLIDGE

FOREST ENGINEER

**TIMBER ESTIMATES AND VALUATION
LOGGING PLANS TOPOGRAPHIC MAPS**

31 CENTRAL ST., BANGOR, MAINE

HAUCK

Forestry Torches and Weed Burners

used by the U. S. Forestry Service, Municipal, County and State Depts., Tree Nurseries, Seed Growers, etc., for fire-fighting, brush burning, weed burning, etc. Send for bulletins 1012 and 1013.

HAUCK MANUFACTURING CO.
126 Tenth Street Brooklyn, New York

ESTATE FORESTRY



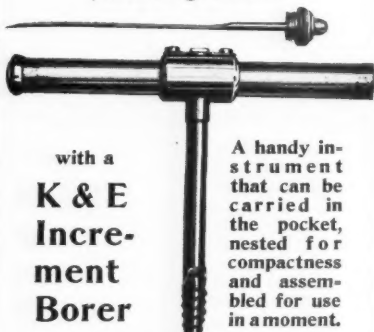
We can help you create and maintain the Forest on your Estate. Your Woodlot is an asset to handle so as to give it beauty, health, increased growth and power to pay dividends. Silviculture is to forests what agriculture is to crops. Without obligation Write Us For Advice.

JAMES W. SEWALL

Consulting Forester

Old Town, Maine

Examine the **HEART** of the tree without injuring its future growth.



with a
**K & E
Increment
Borer**

A handy instrument that can be carried in the pocket, nested for compactness and assembled for use in a moment.

Send for illustrated booklet descriptive of this necessary accessory to a forester's equipment

KEUFFEL & ESSER CO.

NEW YORK, 127 Fulton St.

General Office and Factories: HOBOKEN, N. J.

CHICAGO SAN FRANCISCO

516-20 S. Dearborn St.

30-34 Second St.

ST. LOUIS

MONTREAL

817 Locust St.

5 Notre Dame St., W.

Drawing Materials Mathematical and Surveying Instruments

1887—FORTY YEARS OF PROGRESS—1927

F. J. LEWIS MFG. CO.

CREOSOTE OIL

ALL SPECIFICATIONS

General Offices—2500 S. Robey St., Chicago, Ill.

Plants—
Chicago, Ill. Dover, Ohio Fairmont, W. Va.
Granite City, Ill. Newark, N. J. Chattanooga, Tenn.

USE AEROIL KEROSENE TORCHES

For Fighting Forest Fires, Brush Burning
Scorching Fox Pens and Kennels

Made in 4 sizes, priced \$25.00 to \$60.00

Full information in Bulletin No. 56-F

AEROIL BURNER CO., INC.

WEST NEW YORK, N. J.

Col. Greeley Refutes Baum Charges

(Continued from page 648)

Baum's charges as to the make-up of our supervisory force are demonstrably false. There is no District Forester in our eight districts who has not gone through the 'fire' mill and who does not know a great deal about the 'fire game.'

"Mr. Baum concludes that:

"The Forest Service organization must be revamped from top to bottom * * * * The district offices should either be abolished or curtailed seventy-five per cent, perhaps replaced by one central western office."

"Since 1908 when the Western National Forest Districts were established as a means of bringing our administration closer to the western public, decentralization of authority has been the basis of all Forest Service organization. As rapidly as policies are stabilized and capacity to handle work demonstrated, one function after another takes its way from the central offices outward in the direction of the last responsible administrative officer. There is a constant search for the degree of delegation of authority which will produce the greatest output of desired results.

"The Forest Service districts, with district headquarters at well-selected points, facilitate materially the business between National Forest users and our own organization, reduce long-range administration from Washington, and afford the necessary 'close-at-hand' control of the organization. * * * *

"The abolishment of the district offices as advocated by Mr. Baum would defeat the very object contended for by him, namely,

decentralization, necessitating centralized control from Washington. Such action would not serve the purposes of economy and would meet with a storm of justified protest from the western public, which is accustomed to transact National Forest business with local Forest officials with dispatch. * * * *

"It cannot be fairly said that we 'ignore' necessary changes in our basic organization. There is proof in abundance in the records of the Forest Service that our organization is an ever alive subject of study, analysis and suggestion on the part of men of every rank in the Service.

"Mr. Baum contends that the Forest Service has lost sight of its primary job, 'the conservation and administration of the National Forests,' and 'has dissipated its energies through ex officio leadership in private, municipal, and state forestry.'

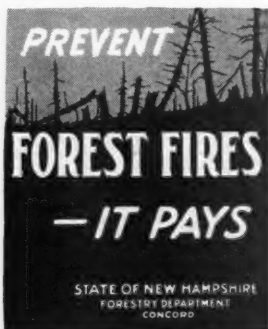
"As Colonel Graves, then Forester, pointed out in 1919 the Forest Service is charged with three broad functions:

"First, the administration and care of the National Forests; second, the encouragement of the practice of forestry outside of the National Forests, through cooperation and public education; third, research in forestry, forestry utilization, and forest products. * * * *

"Our largest function," said Colonel Graves, 'is in connection with the public forests, an activity which engages from 85 to 90 per cent of our personnel and requires about the same proportion of our total expenditures. * * * *

"While protecting the National Forests from fire, we must also provide for the use of their timber, forage, water, and other natural resources. We must lay out and build the roads which Congress has provided for. The National Forests would not last six months if the Service refused to make provision for the use and development of their resources on the plea that we have no time for anything but protection from fire. Furthermore, the Forest Service is required by law to conduct research, to cooperate with the states in fire protection, timber planting, etc., and to promote forestry generally in the United States. These legal mandates cannot be ignored. Protection of the National Forests from fire has always come first in our expenditures, planning, and thought; but we are required by the very nature of our public situation to carry on these other activities in proper balance.

"In the course of his articles, Mr. Baum pays a glowing and appreciated tribute to the Forest Ranger. The Service itself consistently before Congress and to the general public sets up its Forest Ranger as the public officer 'par excellence.' And



DO YOUR BIT--

Toward eliminating the fire evil. Attractive signs prominently displayed throughout the forest will remind the careless of the danger of fire. Let us supply you with signs that carry a forceful message. Used and endorsed by the forestry departments of 36 states.

National Printing & Engraving Co.

ROOM 1512

7 S. DEARBORN ST.

CHICAGO, ILL.

These signs are on a heavy water proof fibre paper stock, with reinforced edges for tacking. They will withstand weather for more than six months.

Send for prices and samples

yet Mr. Baum would attempt to convince his reading public that this intelligent, capable, resourceful, fearless, body of men are stifled by a bureaucratic office force, their needs not considered, their experience not drawn upon by the leaders of the Service.

"Perhaps the most important Forest Service conference that has been held in the past decade was the Mather Field Conference, in California, November 14-27, 1921. This conference was attended by the Forester, District Foresters, Assistant District Foresters, Forest Supervisors, Rangers, and staff men from all corners of the National Forest system. Two weeks were given exclusively to a searching analysis of Forest Service experience in forest fire prevention and control, and there was drawn from this analysis a code of action which is still a guiding factor in forest fire plans and their execution. But a year ago in our District of the East and South, a similar conference was held, and the Supervisors and their assistants drew on a similar basis of field experience their own governing Code of Fire Control Principles.

"Our working Manual declares, 'The Forest Service is a firm adherent of personal responsibility and accountability. The importance of initiative, free criticism, free interchange of ideas, group spirit, and group solidarity in thought and action is fully appreciated and these elements in the organization are encouraged; but the Service is built on the theory that along with these things must go clear, direct accountability of some individual for the results produced.' And again: 'It is the outstanding characteristic of the Service that the average member has less supervision and is more nearly his own boss than would be true if he were working for a salary in other organizations. Regardless of rank, each member of the Service is expected to contribute to its policies and methods. He not only has this opportunity but is responsible for doing so.'

"There is not a major policy, not an important practice in the Forest Service of today which does not bear the marks of earnest helpful consideration, test, and suggestion by men of every rank."

In concluding his letter to Congressman MacGregor, Colonel Greeley says:

"The Service is perhaps no more satisfied with the status of National Forest protection than is Mr. Baum. With many of the fifteen suggestions he offers in his final article I am in sympathy—in fact, I have long urged their adoption, and to the limit of the facilities afforded I have endeavored to accomplish many of their results. The Forester's program on pages 23 and 24 of his last annual report is recurrent evidence of this. To the extent to which Mr. Baum has stressed these matters, he has rendered a real service to forest protection. It is unfortunate that he did not confine himself to actual facts."

North Carolina Asks Wood Utilization Survey

An invitation to make a tour of inspection of wood-using industries in North Carolina has been extended to Axel H. Oxholm, director of the National Committee on Wood Utilization, United States Department of Commerce, by State Forester J. S. Holmes. The trip would carry the expert through the center of the furniture manufacturing district of the Piedmont section. The Southern Furniture Manufacturers' Association has offered to aid in mapping out an itinerary for Mr. Oxholm.

Hunting Districts In Texas Changed

New boundaries of hunting districts in Texas are made by an amendment to the regulations under the migratory-bird treaty act recently approved by the President. According to the United States Biological Survey, the changes were made to harmonize the Federal regulations and the State law. This amendment has the effect of prescribing an open season on mourning doves from September 1 to December 15, and on waterfowl coot, gallinules, and Wilson snipe or jacksnipe from October 16 to January 31 in that portion of the State lying west and north of the Rio Grande River directly west of the town of Del Rio.

SMITH INDIAN FIRE PUMP

A well built fire pump for long hard service



Easily Carried and Operated by Anyone

The Indian can not be excelled for fighting forest fire, brush fires, grass fires, in fact for fighting fires anywhere.

The Knapsack tank, holding about 5 gallons, is conveniently carried on the back, similar to a pack basket. It has a detachable strainer, preventing any sediments or rubbish entering when dipped into stream or lake for filling. The pump is entirely of heavy brass and has no leather packings or parts to play out or wear out, and is always in working order ready for any fire emergency. One brass cylinder works back and forth inside the other, and slow easy pumping throws a powerful 50-foot stream to any point desired.

The Indian is easily carried over logs and hilly places, and quickly extinguishes fires in trees, crotches, stumps, etc., and is highly recommended. Used on private estates, private and public parks, private and public lumber preserves, state and federal preserves. No forest either small or large should be without this fire pump.

Write for descriptive circular and prices on the Indian and other styles.

Manufactured by

D. B. SMITH & COMPANY
Utica, N. Y., U. S. A.

PROTECT YOUR FORESTS

These Galvanized Steel Towers

designed to meet the requirements of the

Forest Service

afford the best means for locating forest fires so that they may be extinguished before they have become destructive.

This type of tower is made from 21 ft. to 100 ft., or more, in height. It is safe and easy for anyone to climb.

These towers are made so that they are quickly built up from the ground a piece at a time. They are complete in every detail essential in a most satisfactory observation tower.

Write for Forest Service Tower Bulletin to

AERMOTOR CO.

2500 Roosevelt Road
CHICAGO, U. S. A.

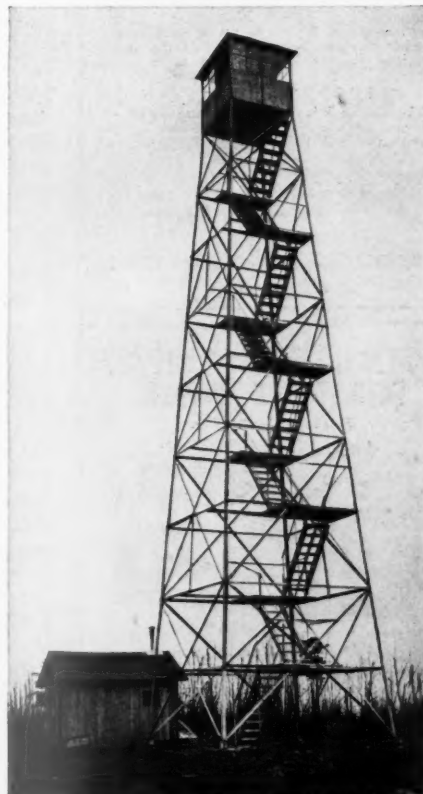


Photo Courtesy Penn. Dept. of Forests & Waters

Regulation



UNITED STATES

Forestry
Style
Uniform

No guess
work when
you buy an
outfit here—
It will look
right, fit
right, wear
right and—
Be
RIGHT—

RIGHT from start to finish.

Write for NEW Illustrated Catalog
with Samples and Prices attached

Write for our Shirt Folder

SMITH-GRAY

729 Broadway

New York

HOUGH'S BOOKS

The Accepted Standard

American Woods

Illustrated by actual specimens (showing the end "quarter" and "flat" grains of each wood) with text telling uses, properties, distribution, etc. The plates containing the specimens can be taken out for comparison or school room uses. Ideal for teachers. In 13 volumes, each containing 25 specimens. \$10 and \$15 per vol. according to binding.

Handbook of Trees

The 891 illustrations enable one to identify all of the trees east of the Rocky Mountains and north of the Gulf States at any season.

\$8 and \$15, according to binding.

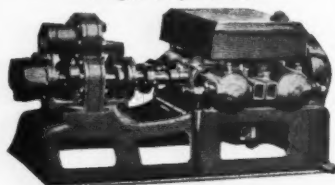
Hough's Books are Ideal Gifts
for Foresters and Tree Lovers

Write for further information

ROMEYN B. HOUGH CO.
Lowville, N. Y.

PACIFIC NORTHERN TYPE "N" FOREST FIRE PUMPER

Weights Only 70 Lbs.



A few of its many uses—

Fighting Forest Fires
Fighting Underground Fires
Fighting Fires Underneath Wharves
Controlling Brush and Woods Fires
Fire Protection for Small Communities
Supplying Water and Fire Protection for Camps,
Private Estates, etc.

Write for Catalogue

A. H. BLANCHARD

New England and New York Distributor

PACIFIC MARINE SUPPLY CO.

25 Hampshire St.

Cambridge, Mass.

Railroads Spend Large Sums For Forest Products

Purchases of forest products, including crossties, by the railroads of the United States last year amounted to approximately 12 per cent of their total expenditures for fuel, materials, and supplies, according to information furnished to the United States Forest Service.

The railroads of the country in 1926 spent a total of \$1,559,032,331 for fuel and supplies, of which \$186,291,234 went for lumber and other forest products. In 1925 the railroads spent \$170,305,031 for forest products out of their total purchases of \$1,392,043,000.

Last year the railroads purchased 93,759,913 crossties at a cost of \$101,000,000. This was an increase of approximately 6,000,000 ties compared with the preceding year, but a decrease under the two previous years. Other purchases of forest products included switch and bridge ties, lumber and timber for car repairs, and maintenance construction.

Florida to Entertain Hoo Hoo

The program for the Thirty-Sixth Annual Convention of the Concatenated Order of Hoo Hoo, to be held at Miami, Florida, November 9 to 11, was recently completed at a conference of leaders of the fraternity. The Columbus Hotel, overlooking Biscayne Bay, was named headquarters for the meeting. Features of the entertainment program include the Osirian Cloister Banquet at the Coral Gables Country Club, a beach frolic at the Roney Plaza, North Miami Beach and a grand ball at the Alcazar Hotel. Plans were also tentatively complete for an excursion to Havana, Cuba, November 12, following the close of the convention.

North Carolina Forestry Association Meeting

Stressing the need for fire wardens in two-thirds of the counties of North Carolina and advocating a Statewide system of fire lookout towers, telephones and fire trails, the North Carolina Forestry Association, at its Seventeenth Annual Meeting at High Point, late in September, adopted a resolution calling on the State legislative bodies for a substantial increase in forestry appropriations for 1929. The Association also appointed a committee of five members to study the forest taxation laws of other states with the object of preparing suitable measures for North Carolina to be urged for passage by the General Assembly.

Another resolution adopted by the Association calls for the establishment of a well equipped and ably manned forest school at Duke University on a standard comparable with that of the forest schools of the highest rating in the United States. The Association re-

affirmed its endorsement of the McNary-Woodruff Bill, and agreed to petition the State legislature for the measures necessary to authorize and permit the federal government to purchase, own and hold land in the pine region of the State.

C. J. Harris, of Dillsboro, president of the Harris Granite Corporation, was elected president of the Association for the coming year. Mr. Harris recently presented the State with a lookout tower on Mt. Mitchell. R. B. Robertson, of Canton, was elected first vice-president; Verne Rhoades, of Asheville, second vice-president; J. E. Woodland, of Morehead City, third vice-president; Mrs. W. N. Reynolds, of Winston-Salem, fourth vice-president. R. W. Graeber, of Statesville, was named secretary and W. G. Damtoft, of Canton, treasurer.

Cleveland Moves Large Trees

That large trees can be successfully moved and transplanted was recently demonstrated in Cleveland, Ohio, when the Division of Forestry of the City Department of Parks and Public Property moved a number of 19 inch elm trees from the outskirts of the city and transplanted them at the site of the new Art Museum in the heart of the city. According to Raymond F. Persche, city forester, the success of the enterprise was due chiefly to the improved Irish tree movers recently acquired by the city. These machines weigh more than 3,000 pounds and consist chiefly of a large curved cupped cradle with which the tree and ball of soil around the roots is lifted and transported. One of the outstanding features of the new machine is the great lifting force directly at the point of most resistance, the under side of the ball of soil and roots. This prevents serious injury to the roots and trunk of the tree. The movers have a capacity of eight times their weight.

Will Study Fur Production In Alaska

The production of fur-bearing animals in Alaska is to be studied under a cooperative agreement recently made between Governor George A. Parks, of Alaska, and the United States Biological Survey. Dr. Earl Graves, a veterinarian and a graduate of Kansas State Agricultural College, has been selected to conduct the work. He will study the problems incident to the production of fur for commercial purposes, and advise fur farmers of Alaska in matters pertaining to the breeding and care of fur-bearing animals and the prevention and cure of diseases among them. Prior to sailing for Alaska, Doctor Graves spent a month at the United States Fur-Animal Experiment Station, in Saratoga County, N. Y., where he studied methods of breeding, feeding, and handling fur animals that are being raised there in captivity.

Oregon School of Forestry

Located in the center of the last great stand of virgin timber in the United States.

Offers four and five-year courses in professional forestry, logging engineering, and lumber manufacture.

Field work in the magnificent Oregon forests, easily accessible from the school. The largest logging operations and lumber manufacturing plants near at hand.

Summer work readily obtainable in the Forest Service, in logging camps, and in the mills.

For catalog and further information, address

G. W. PEAVY, Dean
Oregon State
Agricultural College
Corvallis . . . Oregon

Yale School of Forestry

Established in 1900

A graduate department of Yale University, offering a two years technical course in forestry leading to the degree of Master of Forestry.

Special opportunities are provided for advanced work and research in the laboratories and the school forests.

For further information and catalog address

The Dean of the
School of Forestry
New Haven, Conn., U. S. A.

Choosing a School

The schools whose advertisements appear in **AMERICAN FORESTS AND FOREST LIFE** are the leading forestry schools in their respective localities. They offer a well balanced curriculum and the inspiration of leaders in the profession of forestry.

Members may select from them with the full assurance that they are choosing from the best.

Harvard Forest

Petersham,
Massachusetts

A forest experiment station of two thousand acres, 19 years under management on a sustained yield. Large variety of silvicultural treatment in progress. Logging, milling, and marketing annually carried on. Extensive plantations established from the Forest nursery.

Competent graduate students accepted as candidates for degrees of M. F. or D. S.

RICHARD T. FISHER
Director

Forestry Training in the Heart of the Rockies

Colorado School of Forestry
A Department of Colorado College

Undergraduate and graduate courses in Technical Forestry. Forestry teaching in spring and fall at Manitou Forest (a 7,000-acre Forest belonging to the School), and the winter term at Colorado Springs.

Gordon Parker, Director
Colorado Springs, Colorado

University of Maine

Orono, Maine

The Forestry Department offers a four-years' undergraduate curriculum, leading to the degree of Bachelor of Science in Forestry.

Opportunities for full technical training, and for specializing in forestry problems of the northeastern States and Canada.

Eight-weeks' camp-course required of all Seniors in Forestry, in practical logging operations in northern Maine, under faculty supervision.

For Catalog and further information address

JOHN M. BRISCOE
Professor of Forestry

School of Forestry

University of Idaho

MOSCOW, IDAHO

Offers thorough training in Practical Forestry, preparing for federal, state and private work.

Four and Five Year Courses, leading to the degrees of Bachelor of Science in Forestry and Master of Science in Forestry respectively.

Opportunity is given to specialize in General Forestry, Logging, Engineering, and Range Management.

Large logging and milling operations, important wood-working industries, also extensive federal, state, and private forests near at hand. Excellent opportunity for summer employment.

For further particulars address

FRANCIS G. MILLER, Dean

The New York State College of Forestry

Syracuse University
Syracuse, N. Y.

A FOUR-YEAR undergraduate course is offered in General forestry with the degree of Bachelor of Science and special courses leading to the degree of Master of Forestry, Master of City Forestry, Master of Science, and Doctor of Philosophy, a four-year course in pulp and paper manufacture, and a short course each spring in dry kiln engineering and lumber grading are given. The State Forest Experiment Station of ninety acres at Syracuse, the Charles Lathrop Pack Experimental Forest of 1,000 acres at Cranberry Lake, the Charles Lathrop Pack Demonstration Forest of 2,250 acres in the Lake George-Warrensburg district, three other experiment stations, the Roosevelt Wild Life Forest Experiment Station, a modern pulp mill, a well-equipped sawmill, a complete dry-kiln plant, the biological laboratories, and an excellent reference library afford unusual opportunities for research and instruction. Students may elect work in nine different fields.

FRANKLIN MOON, Dean



Douglas Fir

Douglas Fir is the Nation's most important structural wood judged on quality, strength, serviceability and supply. 22% of all the lumber produced in this country is Douglas Fir. If you are unfamiliar with Douglas Fir timbers send for the Weyerhaeuser book "Structural Timbers of Douglas Fir." We will include a copy of U.S. Forest Products Laboratory "Technical Note No. 201" which shows the comparative strength values of the various structural woods.



Re-sawed, loaded, shipped same day

A FIRE in an Iowa flour mill during the busy season caused a shut-down for structural repairs. Timbers were needed.

The telegraphic order reached the Weyerhaeuser Minnesota Transfer Plant at eight o'clock one Thursday morning. The timbers had to be re-sawed, and surfaced four sides. They were put in work immediately. At two-thirty that afternoon the loaded car was being switched out of the yard. At nine o'clock Saturday morning the car was being unloaded at the flour mill.

An emergency and urgent need of lumber or timbers may arise for you. Call on the Weyerhaeuser Distributing Plant nearest you. You'll receive immediate service and excellent stock. Make a note of the phone number now.

Big Timbers and Plank 24-hour Shipments from Weyerhaeuser Distributing Plants

DOUGLAS FIR Timbers and Plank a Specialty

Telephones: Baltimore, Plaza 6061 • Saint Paul, Midway 7510 • Portsmouth, 79 Ring 2

WEYERHAEUSER SALES COMPANY, *Distributors of Weyerhaeuser Forest Products*

General Office: SPOKANE, WASHINGTON



MINNEAPOLIS
806 Plymouth Bldg.

ST. PAUL
2563 Franklin Ave.

Branch Offices:
CHICAGO
208 So. La Salle St.

KANSAS CITY
1418 R. A. Long Bldg.

TOLEDO
1313 Second Nat. Bk. Bldg.

PITTSBURGH
2401 First Nat. Bk. Bldg.

PHILADELPHIA
1600 Arch Street

NEW YORK
285 Madison Ave.

PORT NEWARK
P.O. Drawer 629, Newark, N. J.



All orders other than for railway purposes subject to confirmation by retail lumber dealer

